



## **Arboricultural Impact Assessment**

Site Address:

**Park Village Residential Development  
37 Graham Road Highett**

Report Commissioned by:

**Sunkin Projects Pty Ltd**

Prepared by:

**Peter Clark**

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## 1 INTRODUCTION AND REPORT OBJECTIVES

- 1.1 This report is at the request of Gallagher Jeffs and supplied exclusively for Sunkin Projects Pty Ltd. The report contents should not be made available to any other parties, other than governing Council bodies and affected parties, unless by express permission of Treescape Consulting Pty Ltd.
- 1.2 This report is an analysis of 64 (sixty-four) trees that exist at the southern end of the old CSIRO site at 37 Graham Road Highett.
  - 1.2.1 The current assessment of 36 (thirty-six) mature and semi-mature trees that exist at the southern end of the old CSIRO site at 37 Graham Road Highett were surveyed by Peter Clark on Friday 9 July and Monday 12 July 2021.
  - 1.2.2 The initial report undertaken by Peter Clark in June 2020 was an analysis of 28 (twenty-eight) trees. The initial stand of trees assessed (trees numbered 1 to 28) are considered significant stand of native trees, with the probability of some trees being remnant.
- 1.3 The report covers a number of aspects, but essentially provides comment on the protection of this significant group of trees that are to be retained on site. This report outlines the tree protection zones surrounding each tree that is the radius from tree centre and this area must be protected and isolated.
- 1.4 The recommendations given are general guidelines for tree protection measures. These guidelines do not constitute a Tree Management or Protection Plan. It would be recommended that no site works should be started without the Tree Management Plan being put in place and all site workers understand Tree Protection Policy.

## 2 SURVEY METHODOLOGY

- 2.1 The collection of data was undertaken by Peter Clark of Treescape Consulting Pty Ltd on Thursday 25 June 2020, Friday 9 July and Monday 12 July 2021 . The data was captured on a hand held computer and is recorded in this report on detailed survey sheets, which are located in **Appendix 7.1**.
- 2.2 The trees were given a number that corresponds to the numbering on the Tree Location Plan, which is reproduced in **Appendix 7.2**. The site map is not to scale unless specified.
- 2.3 The trees were assessed and their species, estimated height, diameter at breast height (DBH) and the estimated canopy width recorded. For definition of terms used in the Arboricultural Assessment, see **Appendix 7.4**– Explanation of Terms.
- 2.4 The survey undertaken of all subject trees was of a preliminary nature, with a visual inspection being made from the ground level only. The subject site trees were not climbed and no samples (soil, fungal etc.) were taken for analysis. Tree defects not apparent from this ground-based visual inspection are expressly excluded from the scope of this report. Additionally, this report is based upon the condition of the trees at the time of assessment only.

### 3 DISCUSSION AND RECOMMENDATIONS

- 3.1 This report is an analysis of 64 (sixty-four) trees that exist at the southern end of the old CSIRO site at 37 Graham Road Highett.
- 3.2 This initial report undertaken in June 2020 is an analysis of 28 (twenty-eight) trees that exist at the southern end of the old CSIRO site at 37 Graham Road Highett. The tree group is considered to be a significant native stand of trees with the probability of some trees being remnant.
  - 3.2.1 The initial site assessment found the stand of trees is made up of twenty (20) *Eucalyptus camaldulensis* (River Red Gum) and eight (8) *Eucalyptus melliodora* (Yellow Box) are generally in a good overall condition with the majority of trees considered to attain a high and very high Arboricultural and Retention Value.
  - 3.2.2 The stand of 28 (twenty-eight) trees is generally in a fair to good overall condition with a dense canopy of foliage and good growth indicators such as extension growth, leaf size and colour. There are few major structural defects and generally consist of an open canopy with well-defined stem/limb unions.
  - 3.2.3 Tree #1, *Eucalyptus melliodora* (Yellow Box) has a swollen area around a cavity on the west side of the tree's trunk; this area has previously been tested by a Picus Sonic Tomograph (Tree Ultrasound).
  - 3.2.4 The test result from the Picus Sonic Tomograph test came back indicating that the decay area was not significantly advanced; however it would be recommended that a visual inspection of the swollen area with cavity is undertaken when climbing arborist is within the tree's canopy.
- 3.3 The current assessment is a further 36 (thirty-six) mature and semi-mature trees found that the predominant species were *Corymbia citriodora* (lemon-scented Gum) and *Corymbia maculata* (Spotted Gum).
  - 3.3.1 The 36 (thirty-six) mature and semi-mature trees are generally in a fair overall condition with the majority of trees considered to attain a medium and high Arboricultural and Retention Value.

### 4 CONCLUSION

- 4.1 There is no construction activity proposed at the southern end of the site as the majority of the 64 (sixty-four) trees assessed are to be retained in a large reserve. Isolation of this reserve with a protection fence is recommended to separate the development area from the reserve.
  - 4.1.1 The tree protective fencing should be a 1.8 metre high chain link fence installed prior to any works (including site clean-up) commencing on site. The tree protection fence should remain in place until all site development work is completed. The protective fencing should be located at the prescribed distances to isolate the development area from the reserve and clearly signed **TREE PROTECTION ZONE**. The sign should be similar to the **6. Tree Protection Guidelines**.
  - 4.1.2 After the erection of the chain-link fence each tree within the reserve that is to be isolated, a star picket and flag bunting should be installed around each tree to delineate the Tree Protection Zone (TPZ) for the duration of the construction process.

- 4.2 The TPZ area around each tree should be mulched to a depth of 100 to 150mm. The mulch must be general arboricultural mulch that is weed free.
- 4.3 Trenching for underground services located within the reserve that the trees are to be isolated within should not be undertaken without the project arborist being consulted.
- 4.4 Trenching for underground services located within recommended tree protection zone (TPZ) for each tree must be avoided. Should there be no alternative for service location; the services must be bored underneath the area designated as the tree protection zone. No trenching whatsoever should be used to install services within the protected area.
- 4.5 As mentioned above this stand of trees are generally in a fair to good overall condition. The trees will require some appropriate management within the trees' crown. The works required will include reduction of end weight on the long lateral limbs and branches and removal of deadwood that will help with monitoring the trees' overall condition. Some trees are showing signs of possum predation and installation of possum guards would also be recommended. All pruning must be carried out in accordance with AS4373:2007 - Pruning of Amenity Trees and by a suitably qualified Arborist.
- 4.6 These guidelines do not constitute a specific Tree Management Plan (TMP) (as per the Australian Standard AS 4970 - 2009 - *Protection of Trees on Development Sites*) and it is recommended that a TMP is developed for this site prior to any construction activity commences on site. The TMP should address and not be limited to machinery movement within the southern end of the site, installation of tree protection fence and signage and any recommendations for any ground works required within and near the TPZ for each tree.

Yours sincerely,



Peter Clark

## 5 BIBLIOGRAPHY

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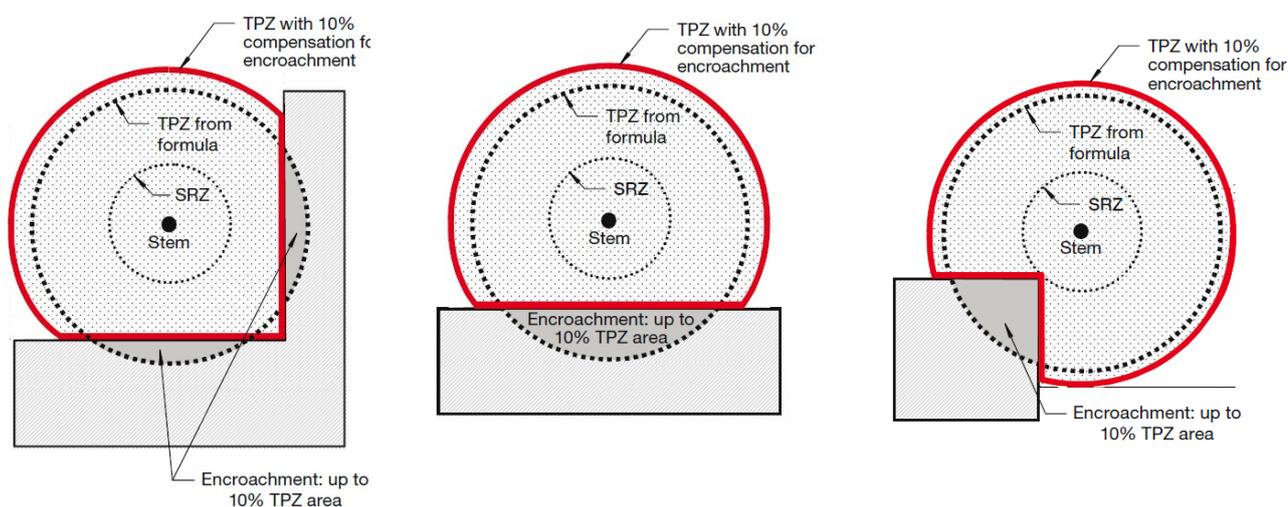
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## 6 TREE PROTECTION GUIDELINES (INFORMATION ONLY)

- 6.1 Treescape Consulting assesses individual tree protection requirements based upon the Australian Standard AS4970 – 2009 ‘Protection of Trees on Development Sites’. Tree protection requirements are calculated based upon trunk diameter of the tree at breast height. These calculations produce what is referred to in this report as the Tree Protection Zone (TPZ) and is provided as a measurement in metres in a radius from the centre of the trunk.
- 6.2 The TPZ is the zone in which protective measures should be applied in order to protect the tree(s) whilst maintaining the current levels of health and vigour.
- 6.3 Determination of the structural root zone or the zone of rapid taper is provided as the Structural Root Zone (SRZ). The structural root zone calculations are based upon the Australian Standard AS4970 - 2009. The SRZ determines the minimum distance around the tree in which the structural stability of the tree is able to be maintained.
- 6.4 It is important to note that the SRZ only determines the root plate area or the zone of rapid taper. Excavation within this area will not only cause a decline in tree vigour but may also cause catastrophic tree failure (Coder, 1996).
- 6.5 Often it is difficult to protect the entire TPZ due to site constraints. In such events it is imperative that condition and species tolerance to disturbance are evaluated in conjunction with the site characteristics. Helliwell (1985) and Harris (1999) identified that a healthy tree may tolerate removal of up to one-third of its roots and possibly up to 50% in some cases, although stability may be compromised at this level.
- 6.6 In situations where the TPZ of a tree to be retained will be in close proximity to a proposed development or where there will be encroachment into the TPZ of a tree, a specific tree management plan should be developed that provides prescriptive measures to protect trees on development sites. Any encroachment greater than 10% into the TPZ will require exploratory trenching (through non-destructive means) to determine the actual impact to the tree. Further, any encroachment into the TPZ should be compensated in other areas within root zone (as shown in the diagrams below).

*Extract from Australian Standard AS 4970 - 2009 Protection of trees on Development sites*



The following requirements are only provided for basic guidance with the design phase for a project. These guidelines **do not** constitute a specific tree management plan.

- A tree protective fence should be installed at the recommended distance allocated for each tree to be retained. The fence should be located at the TPZ radial distance provided.
- The protection fence should be rigid (chain link or similar) and should not be less than 1.8 metres in height. Fencing should be firmly attached to a removable concrete or similar base. Alternatively, star pickets (1.5 metre spacing) and para-webbing may be used to define the tree protection area. Fencing should be in accordance with the Australian Standard for Temporary Fencing AS 4687.
- In cases where the TPZ cannot be entirely fenced, it is recommended that ground protection is used. Specific ground protection requirements will form part of a tree management plan that should be developed for each tree to be retained.
- No soil levels should be altered within the fenced TPZ area, no heavy machinery should be allowed to pass within this area and no spoil, chemicals, building materials or refuse should be stored within this area. Nothing whatsoever should be attached to the tree (excluding tape to identify a tree to be protected).
- The area within the tree protection fence should be covered with a layer of organic mulch (woodchips) to a depth of 150mm prior to the commencement of the project. Mulch material should comply with Australian Standard AS 4454.
- The tree protective fencing should be installed prior to any works (including demolition) commencing on site and should remain in place until all site development work is completed. The protective fencing should be located at the prescribed distances and clearly signed **TREE PROTECTION ZONE**. The sign should be similar to the following:



- An area should be designated on site, which is at least 10 metres distance from any tree protection zone of the trees to be retained, where all building materials, chemicals etc. can be stored throughout the proposed development.
- Open trenching for underground services located within the recommended tree protection zone (TPZ) must be avoided. Should there be no alternative for service location; the services must be bored underneath the area designated as the tree protection zone. No trenching whatsoever should be used to install services within the protected area.
- Soil moisture during construction should be maintained at not less than 50% of field capacity (usually 10 litres of water per 10mm of each tree DBH per week). Irrigation may be applied by hand, automatic or manual irrigation system, or by fine spray from water tanker located outside the previously submitted exclusion zones. Water is to be applied at a volume and frequency required so as to maintain turgor and leaf retention and encourage healthy root development. The consultant Arborist should discuss variations to the amount of water to be supplied with the site or Project Manager.
- Remedial pruning works recommended to be undertaken on the subject trees must be carried out to Australian Standard AS4373 (2007) – Pruning of Amenity Trees, by a qualified Arborist. If pruning works are to be undertaken then these works should be carried out prior to any construction works beginning on site.
- Documentation should be provided to the site manager by the consultant Arborist for each inspection during the development process which details the consultant Arborist name, date and time of inspection, the stage of development, and provides comments of what actions are required.

## 7 APPENDICES

### 7.1 Tree Data

Tree Id	Botanical Name	Common Name	Arbor Value	Retention Value	ULE (years)	Age Class	Health	Structure	Tree Height [m]	Width (m)	DBH [cm]	TPZ [m]	Notes
1	<i>Eucalyptus melliodora</i>	Yellow Box	Very High	Medium	50+	Mature	Fair	Fair	14	12	90	10.8	The tree requires deadwood removal and weight reduction on lateral limbs
2	<i>Eucalyptus melliodora</i>	Yellow Box	Very High	Very High	50+	Mature	Good	Fair	20	19	108	12.96	There is a defect on the trunk of the tree on the west side 2.5 m from base. The defect has been previously tested as sound.
3	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Good	Fair	17	15	90	10.8	
4	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Medium	50+	Mature	Fair	Good	20	22	112	13.44	Deadwood removal
5	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	15	16	105.25	12.63	Deadwood removal
6	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Good	Fair	18	11	72	8.64	
7	<i>Eucalyptus camaldulensis</i>	River Red Gum	High	Medium	50+	Mature	Poor	Fair	12	8	77	9.24	The tree is declining, however worthy of retention and requires deadwood removal and weight reduction.
8	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	17	23	134.27	15	Undertake weight reduction pruning and removal of deadwood
9	<i>Eucalyptus camaldulensis</i>	River Red Gum	High	High	50+	Mature	Fair	Fair	13	12	62	7.44	Semi mature tree
10	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	fair	Fair	19	16	108	12.96	Remove deadwood and weight reduce
11	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	13	12	75	9	Check support cable and reduce weight to south
12	<i>Eucalyptus camaldulensis</i>	River Red Gum	Medium	High	6 - 20	Mature	Poor	Fair	15	9	61	7.32	The tree is in decline, however worthy of retention. Remove deadwood.

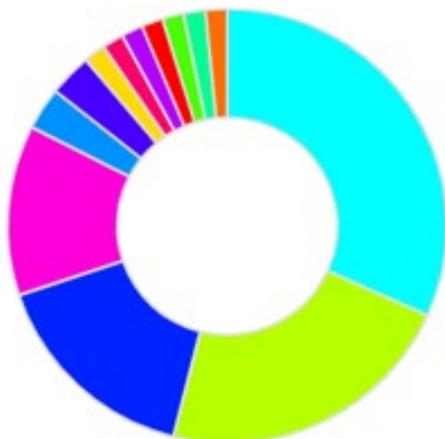
Tree Id	Botanical Name	Common Name	Arbor Value	Retention Value	ULE (years)	Age Class	Health	Structure	Tree Height [m]	Width (m)	DBH [cm]	TPZ [m]	Notes
13	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Good	Fair	20	15	78	9.36	Reduce weight on limbs to south
14	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	21	18	92.96	11.16	
15	<i>Eucalyptus camaldulensis</i>	River Red Gum	High	High	21 - 50	Mature	Fair	Fair	14	10	54	6.48	
16	<i>Eucalyptus camaldulensis</i>	River Red Gum	High	High	50+	Mature	Fair	Fair	17	16	78	9.36	Weight reduce north and east limbs
17	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	15	15	74	8.88	Reduce in weight on lateral branches to south. Remove deadwood
18	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	17	12	72	8.64	
19	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	18	14	92	11.04	Deadwood on east side of tree
20	<i>Eucalyptus camaldulensis</i>	River Red Gum	High	High	50+	Mature	Fair	Fair	16	11	73	8.76	Remove deadwood
21	<i>Eucalyptus melliodora</i>	Yellow Box	Very High	Very High	50+	Mature	Good	Good	14	12	76.69	9.2	Remove deadwood
22	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	18	16	98	11.76	Weight reduce lateral branches, remove deadwood and install possum guard
23	<i>Eucalyptus camaldulensis</i>	River Red Gum	Very High	Very High	50+	Mature	Fair	Fair	17	15	78	9.36	Weight reduce lateral branches and remove deadwood
24	<i>Eucalyptus melliodora</i>	Yellow Box	Very High	Very High	50+	Mature	Good	Good	15	15	94	11.28	Reduce in weight on lateral limbs to east and south
25	<i>Eucalyptus melliodora</i>	Yellow Box	Very High	Very High	50+	Mature	Good	Good	12	13	73	8.76	Reduce and weight on lateral limbs
26	<i>Eucalyptus melliodora</i>	Yellow Box	High	High	50+	Mature	Good	Fair	10	10	57	6.84	
27	<i>Eucalyptus melliodora</i>	Yellow Box	High	Very High	50+	Mature	Good	Fair	18	14	79	9.48	Reduce and weight on longest lateral limbs
28	<i>Eucalyptus melliodora</i>	Yellow Box	High	High	50+	Mature	Good	Fair	13	10	78.49	9.42	Remove deadwood

Tree Id	Botanical Name	Common Name	Arbor Value	Retention Value	ULE (years)	Age Class	Health	Structure	Tree Height [m]	Width (m)	DBH [cm]	TPZ [m]	Notes
29	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	High	21-50	Mature	Fair	Good	17	14	71	8.52	
30	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Semi-Mature	Fair	Fair	8	9	37	4.44	Semi-mature tree
31	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	High	21-50	Mature	Fair	Fair	18	10	54	6.48	
32	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	High	21-50	Mature	Fair	Fair	16	115	67	8.04	
33	<i>Corymbia calophylla</i>	Marri	Medium	Medium	6-20	Mature	Fair	Fair	13	8	54	6.48	
34	<i>Eucalyptus occidentalis</i>	Swamp Yate	Medium	High	21-50	Mature	Fair	Fair	18	12	82	9.84	
35	<i>Eucalyptus mannifera</i>	Brittle Gum	Medium	Medium	6-20	Semi-Mature	Fair	Fair	7	8	49	5.88	
36	<i>Corymbia maculata</i>	Spotted Gum	Medium	High	21-50	Semi-Mature	Good	Good	16	8	41	4.92	
37	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Good	Good	12	7	40	4.8	The trees located close to powerlines.
38	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Fair	Fair	14	8	45	5.4	Located in close proximity to power lines.
39	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Good	Fair	12	7	31	3.72	
40	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	50+	Semi-Mature	Good	Fair	13	7	39	4.68	
41	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Good	Fair	12	9	49	5.88	The trees located in close proximity to powerlines
42	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Poor	Fair	10	8	32	3.84	
43	<i>Corymbia maculata</i>	Spotted Gum	High	High	21-50		Good	Good	16	10	53	6.36	
44	<i>Corymbia maculata</i>	Spotted Gum	Medium	Medium	21-50	Semi-Mature	Fair	Fair	12	8	28	3.36	

Tree Id	Botanical Name	Common Name	Arbor Value	Retention Value	ULE (years)	Age Class	Health	Structure	Tree Height [m]	Width (m)	DBH [cm]	TPZ [m]	Notes
45	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Semi-Mature	Fair	Fair	9	6	18	2.16	Semi mature tree
46	<i>Corymbia citriodora</i>	Lemon-scented Gum	Low	Medium	6-20	Semi-Mature	Fair	Fair	10	7	27	3.31	
47	<i>Corymbia citriodora</i>	Lemon-scented Gum	Low	Medium	6-20	Semi-Mature	Fair	Fair	9	7	28	3.36	
48	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Semi-Mature	Fair	Fair	9	15	20	2.4	
49	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Semi-Mature	Good	Fair	10	10	34	4.08	
50	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Semi-Mature	Good	Fair	11	8	41	4.92	
51	<i>Corymbia citriodora</i>	Lemon-scented Gum	Medium	Medium	21-50	Mature	Fair	Fair	13	9	50	6	
52	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Low	Low	6-20	Semi-Mature	Fair	Fair	8	7	36	4.32	The tree has support structure
53	<i>Eucalyptus sideroxylon</i>	Red Ironbark	Medium	Medium	21-50	Semi-Mature	Fair	Fair	10	8	52	6.24	
54	<i>Corymbia maculata</i>	Spotted Gum	High	High	21-50	Mature	Good	Good	16	9	45	5.4	
55	<i>Corymbia citriodora</i>	Lemon-scented Gum	High	High	21-50	Mature	Good	Good	14	9	46	5.52	
56	<i>Corymbia citriodora</i>	Lemon-scented Gum	High	High	21-50	Mature	Good	Good	17	12	45	5.4	
57	<i>Eucalyptus ovata</i>	Swamp Gum	Medium	High	6-20	Mature	Fair	Fair	13	16	86	10.32	The tree requires weight reduction in Deadwood removal.
58	<i>Allocasuarina littoralis</i>	Black She-oak	Medium	Medium	6-20	Semi-Mature	Fair	Fair	12	8	57	6.84	
59	<i>Eucalyptus ovata</i>	Swamp Gum	Low	Medium	6-20	Semi-Mature	Fair	Poor	8	8	55	6.6	
60	<i>Angophora costata</i>	Smooth-barked Apple Myrtle	High	High	21-50	Semi-Mature	Good	Fair	9	13	45	5.4	

Tree Id	Botanical Name	Common Name	Arbor Value	Retention Value	ULE (years)	Age Class	Health	Structure	Tree Height [m]	Width (m)	DBH [cm]	TPZ [m]	Notes
61	<i>Eucalyptus globulus</i>	Blue Gum	Low	Medium	6-20	Mature	Fair	Poor	12	15	98	11.76	
62	<i>Corymbia citriodora</i>	Lemon-scented Gum	Low	Low	6-20	Mature	Fair	Poor	14	14	47	5.64	The lowest union on the tree is tight and included. The tree Plaza requires support cables or remove tree.
63	<i>Angophora costata</i>	Smooth-barked Apple Myrtle	Medium	Medium	21-50	Semi-Mature	Fair	Fair	6	7	30	3.6	
64	<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	Low	Medium	6-20	Mature	Fair	Fair	6	9	50	6	

7.2 Tree Location Plan



- Black She-oak
- Blue Gum
- Brittle Gum
- Lemon-scented Gum (14)
- Marri
- Narrow-leaved Black Peppermint
- Red Ironbark
- River Red Gum (20)
- Smooth-barked Apple Myrtle (2)
- Spotted Gum (10)
- Swamp Gum (2)
- Swamp Yate
- Yellow Box (8)
- Yellow Gum

### 7.3 Tree Location Plan with TPZ



### 7.4 Explanation of Terms

The following is a definition of terms used regularly in arboricultural assessments.

#### DIAMETER AT BREAST HEIGHT (DBH)

DBH is measured at 1500mm above ground level. In cases where the tree has multiple stems, the measurement is taken at the narrowest point below the stems.

#### HEALTH

Health pertains to the tree vigour, performance & ability to withstand pathogenic entry. Health is rated according to the following categories:

Category	Description
Good	<ul style="list-style-type: none"> <li>• Crown full, with good foliage density</li> <li>• Foliage entire with average colour, minimal or no pathogen damage</li> <li>• Good growth indicators such as extension growth and leaf size</li> <li>• Little or no canopy dieback</li> <li>• Good wound wood development</li> <li>• The tree exhibits above average health/vigour and no works are required</li> </ul>
Fair	<ul style="list-style-type: none"> <li>• Tree may have more than 30% dead wood, or may have minor canopy dieback</li> <li>• Foliage colour may be slightly lower than average and some discolouration may be present, some pathogenic damage may be observed</li> <li>• Typical growth indicators, eg. extension growth, leaf size, canopy density for species in location</li> <li>• The tree exhibits average health/vigour and remedial works may be employed to improve vigour</li> </ul>
Poor	<ul style="list-style-type: none"> <li>• Tree has more than 30% dead wood and canopy die back present</li> <li>• Leaves discoloured and/or distorted, often small, and/or excessive epicormic growth</li> <li>• Pathogens and or stress agents are present that could lead, or are leading to, the decline of tree</li> <li>• The tree exhibits low health/vigour and remedial works or removal may be required</li> </ul>

#### STRUCTURE

Pertains to the physical structure of the tree, including the main scaffold branches and roots. Structure includes those attributes that may influence the probability of major trunk, root or limb failure. Structure is rated according to the following categories:

Category	Description
Good	<ul style="list-style-type: none"> <li>• The tree has a well-defined and balanced crown</li> <li>• Major limbs are well defined and spaced, branch unions appear to be strong with no defects evident in the trunk or the branches</li> <li>• The tree is unlikely to suffer trunk or branch failure under normal conditions</li> <li>• The tree is considered a good example of the species with a well-developed form</li> </ul>
Fair	<ul style="list-style-type: none"> <li>• The tree has some minor problems in the structure of the crown</li> <li>• Some branch unions or branches may exhibit minor structural defects</li> <li>• The tree may have suffered minor root damage or basal damage</li> <li>• These defects are not likely to result in catastrophic trunk or branch failure although some branch failure may occur under normal conditions</li> </ul>
Poor	<ul style="list-style-type: none"> <li>• The tree may have a poorly structured crown</li> <li>• Branch unions or branches may exhibit significant structural defects</li> <li>• The tree may have a substantial lean</li> <li>• The tree may have suffered major root damage or basal damage</li> <li>• These defects may predispose the tree to major trunk or branch failure</li> </ul>

**AGE CLASS**

Age Class is provided as an indication of the relative stage of life that the tree is in based upon its current growing environment and expected longevity. Age Class is based upon the life stage of the subject tree being assessed. Age Class is rated according to the following categories:

Category	Description
Young/ Juvenile	<ul style="list-style-type: none"> <li>• Small tree, sapling or new planting. Generally less than 10 years of age</li> </ul>
Semi Mature	<ul style="list-style-type: none"> <li>• Tree is active growth and has not reached its expected size for growing environment</li> </ul>
Mature	<ul style="list-style-type: none"> <li>• Tree is approaching the expected size for the growing environment.</li> </ul>
Senescent	<ul style="list-style-type: none"> <li>• Tree is in the declining phase of its lifespan for the growing environment</li> </ul>

**RETENTION VALUE (RATING)**

The Retention Value that is given is based upon the overall condition of the tree in the landscape and its suitability for retention in the long term. Arboricultural Rating is rated according to the following categories:

Category	Description
None	<ul style="list-style-type: none"> <li>• The tree is in very poor condition and has no value based on its Arboricultural Characteristics.</li> </ul>
Low	<ul style="list-style-type: none"> <li>• The tree is unlikely to provide useful amenity for longer than 5 years</li> <li>• The tree is in serious decline, poses an unacceptable hazard and/or requires disproportionate maintenance</li> <li>• The tree should generally be removed unless other factors require its retention</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>• The tree is unlikely to provide useful amenity for longer than 20 years</li> <li>• The tree may be in moderate to serious decline, be a short lived species, present an elevated hazard and/or require high maintenance</li> <li>• The tree could be retained or removed depending on the situation</li> </ul>
High	<ul style="list-style-type: none"> <li>• The tree is likely to provide useful amenity greater than 20 years</li> <li>• The tree may be in fair to good condition, have a moderate life-span, present a low to moderate level of hazard and/or require moderate levels of maintenance</li> <li>• The tree should be retained</li> </ul>

**ARBORICULTURAL RATING (RATING)**

The Arboricultural Rating that is given is based upon the overall condition of the tree in the landscape and its suitability for retention in the long term. Arboricultural Rating is rated according to the following categories:

Category	Description
None	<ul style="list-style-type: none"> <li>The tree is in very poor condition and has no value based on its Arboricultural Characteristics.</li> </ul>
Low	<ul style="list-style-type: none"> <li>The tree is unlikely to provide useful amenity for longer than 5 years</li> <li>The tree is in serious decline, poses an unacceptable hazard and/or requires disproportionate maintenance</li> <li>The tree should generally be removed unless other factors require its retention</li> </ul>
Medium	<ul style="list-style-type: none"> <li>The tree is unlikely to provide useful amenity for longer than 20 years</li> <li>The tree may be in moderate to serious decline, be a short lived species, present an elevated hazard and/or require high maintenance</li> <li>The tree could be retained or removed depending on the situation</li> </ul>
High	<ul style="list-style-type: none"> <li>The tree is likely to provide useful amenity greater than 20 years</li> <li>The tree may be in fair to good condition, have a moderate life-span, present a low to moderate level of hazard and/or require moderate levels of maintenance</li> <li>The tree should be retained</li> </ul>

**USEFUL LIFE EXPECTANCY (ULE)**

ULE quantifies the span of time the tree might reasonably be expected to provide useful amenity value, with an acceptable level of safety and at an acceptable cost.

Category	Description
0	<ul style="list-style-type: none"> <li>The tree is dead or almost dead</li> <li>The tree should generally be removed</li> </ul>
<5	<ul style="list-style-type: none"> <li>The tree is unlikely to provide useful amenity for longer than 5 years</li> <li>The tree is in serious decline, poses an unacceptable hazard and/or requires disproportionate maintenance</li> <li>The tree should generally be removed unless other factors require its retention</li> </ul>
6 – 20	<ul style="list-style-type: none"> <li>The tree is unlikely to provide useful amenity for longer than 20 years</li> <li>The tree may be in moderate to serious decline, be a short lived species, present an elevated hazard and/or require high maintenance</li> <li>The tree could be retained or removed depending on the situation</li> </ul>
21 – 50	<ul style="list-style-type: none"> <li>The tree is likely to provide useful amenity for between 21–50 years</li> <li>The tree may be in fair to good condition, have a moderate life-span, present a low to moderate level of hazard and/or require moderate levels of maintenance</li> <li>The tree should generally be retained</li> </ul>
>50	<ul style="list-style-type: none"> <li>The tree is likely to provide useful amenity for greater than 50 years</li> <li>The tree may be in good to excellent condition, a long lived species, present a low level of hazard and/or require low levels of maintenance</li> <li>The tree should generally be retained unless other factors dictate its removal</li> </ul>

## 8 ASSUMPTIONS AND LIMITING CONDITIONS

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  - 9.1. The information in this report covers only those items which were examined and reflects the condition of those items at the time of the inspection.
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