



## **ARBORICULTURAL DEVELOPMENT IMPACT ASSESSMENT REPORT**

**Northside West Clinic Stage 2  
23-27 Lytton Street, Wentworthville NSW**

### **REVISION A**

**14<sup>th</sup> of December 2021**

**Prepared for  
Erilyan**

#### **Prepared by**

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## Executive Summary

This Arboricultural Development Impact Assessment Report has been commissioned by Erilyan to report on trees within the site of Northside West Clinic Stage 2, 23-27 Lytton Street, Wentworthville NSW. The subject trees are located within or adjacent to the boundaries of this site. This site is currently an existing residential medical facility. The site is proposed for redevelopment including the demolition of existing buildings and building of new buildings, carparking, entry roads, pedestrian links and associated landscape works. This report has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention within the context of the proposed development--. The scope of this report includes all trees within areas that may be impacted by the proposed development.

The subject Trees are preserved under Part A 4.1 of Cumberland Council (Holroyd) Development Control Plan 2013 with the exception of Tree 19 which is an exempt species.

The subject trees have a live canopy cover of approximately 1975m<sup>2</sup>. Based on the subject trees not viable to be retained as assessed in this report, this live canopy cover is reduced by approximately 1100m<sup>2</sup> to 875m<sup>2</sup>. This assessment of canopy cover does not include new tree planting. Please refer to the Landscape Design for proposed planting canopy cover.

Tree 36 is in poor and declining condition with a short useful life expectancy.

Tree 41 has a bark inclusion within the primary junction which places this tree at increased risk of failure at this point. In consideration of the future development and the increased number of targets and therefore increased hazard posed, we recommend that a Level 2 (TRAQ) Risk Assessment be carried out on this tree to determine the level of risk and viability of the tree for retention.

The Tree Protection Zones (TPZ) Trees 3, 4, 5, 6, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 50, 51, 54 and 55 are encroached by the proposed construction and required earthworks by a total or major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. These thirty (30) trees will not be viable to be retained and will be required to be removed due to the proposed development.

The TPZ of Tree 47 is encroached by the proposed construction and required earthworks by major encroachment as defined by *AS4970-2009*. These trees will not be viable to be retained based on this encroachment, however this tree is located on the adjacent property and is required to be protected. Further investigation by means of root mapping is required to determine the extent of root development within the area of the existing carpark at the line of the proposed building.

The proposed building line will impact on the canopies of 41, 47, 48 and 49 and will require canopy reduction pruning of these trees. Trees 41, 48 and 49 will require less than 10% of the canopy to be reduced. Tree 41 will require canopy reduction of approximately 20% of the canopy. All canopy reduction is to be carried out in accordance with *AS4373-2007 Pruning of Amenity Trees* by qualified arborists with minimum AQF Level 3 qualifications under the Supervision and direction of the Site Arborist. Prior to pruning works and site-specific Pruning Specification is to be prepared.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

Tree no.	Species	Recommendations	Comments
3	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
4	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
5	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
6	<i>Lophostemon confertus</i>	Remove	Not viable to be retained due to impact of proposed development.
16	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
17	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
18	<i>Cupressus spp</i>	Retain	Viable to be retained and protected in accordance with 8.0.
19	<i>Gleditsia triacanthos</i>	Retain	Viable to be retained and protected in accordance with 8.0. <b>Exempt from DCP.</b>
20	<i>Melaleuca quinquenervia</i>	Retain	Viable to be retained and protected in accordance with 8.0.
21	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
22	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
23	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
24	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
25	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
26	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.

27	<i>Eucalyptus nicholii</i>	Remove	Not viable to be retained due to impact of proposed development.
28	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
29	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
30	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
31	<i>Sapium sebiferum</i>	Remove	Not viable to be retained due to impact of proposed development.
32	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
33	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
34	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
35	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
36	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
37	<i>Sapium sebiferum</i>	Remove	Not viable to be retained due to impact of proposed development.
38	<i>Eucalyptus saligna</i>	Remove	Not viable to be retained due to impact of proposed development.
39	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
40	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
41	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0. Evidence of a bark inclusion in primary junction. TRAQ Level 2 Risk assessment recommended.
42	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.

43	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
44	<i>Syncarpia glomulifera</i>	Retain	Viable to be retained and protected in accordance with 8.0.
45	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
46	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
47	<i>Eucalyptus microcorys</i>	Design amendments or further investigation required.	Not viable to be retained due to impact of proposed development. Tree required to be retained.
48	<i>Casuarina cunninghamiana</i>	Retain	Viable to be retained and protected in accordance with 8.0.
49	<i>Eucalyptus robusta</i>	Retain	Viable to be retained and protected in accordance with 8.0.
50	<i>Eucalyptus saligna</i>	Remove	Not viable to be retained due to impact of proposed development.
51	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
52	<i>Corymbia citriodora</i>	Retain	Viable to be retained and protected in accordance with 8.0.
53	<i>Melaleuca quinquenervia</i>	Retain	Viable to be retained and protected in accordance with 8.0.
54	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
55	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.

## Contents

<b>Executive Summary .....</b>	<b>2</b>
<b>Contents.....</b>	<b>6</b>
<b>1.0 Scope of Works .....</b>	<b>7</b>
<b>2.0 Site Analysis.....</b>	<b>7</b>
2.1 Site.....	7
2.2 Documentation.....	7
2.3 Topography.....	7
2.4 Identification.....	7
2.5 Soils .....	7
<b>3.0 Existing Trees.....</b>	<b>8</b>
<b>4.0 Landscape Significance of Trees .....</b>	<b>13</b>
4.1 Landscape Significance.....	13
4.2 Methodology of Determining Landscape Significance .....	13
4.3 Landscape Significance of Subject Trees .....	13
<b>5.0 Subject Tree Retention Value .....</b>	<b>15</b>
5.1 Tree Retention Value Methodology .....	15
5.2 Retention Value of Subject Trees.....	15
<b>6.0 Impact of Development.....</b>	<b>16</b>
6.1 Tree Protection Zone .....	16
6.2 Structural Root Zone .....	16
6.3 Development Impact.....	18
<b>7.0 Recommendations .....</b>	<b>24</b>
<b>8.0 Pre-Construction Tree Protection Measures.....</b>	<b>27</b>
8.1 General .....	27
8.2 Identification.....	27
8.3 Site Arborist .....	28
8.4 Protective Fence.....	28
8.5 Mulching .....	28
<b>8.6 Signage.....</b>	<b>28</b>
8.7 Trunk and Branch Protection.....	29
<b>9.0 Site Management Issues .....</b>	<b>29</b>
9.1 Soil Compaction.....	29
9.2 Site Access.....	29
9.3 Excavation within Tree Protection Area .....	30
9.4 Possible Contamination / Storage of Materials .....	30
<b>10.0 Tree Protection Measures During Construction</b>	<b>30</b>
<b>11.0 Environmental / Heritage/ Legislative</b>	
<b>Considerations .....</b>	<b>31</b>
<b>12.0 References .....</b>	<b>31</b>
<b>13.0 Disclaimer .....</b>	<b>31</b>
<b>Appendix A Landscape Significance.....</b>	<b>32</b>
<b>Appendix B Tree Retention Values .....</b>	<b>34</b>
<b>Appendix C - Tree Inspection Data.....</b>	<b>35</b>
<b>Appendix D - Tree Location Plan.....</b>	<b>36</b>

## **1.0 Scope of Works**

This Arboricultural Development Impact Assessment Report has been commissioned by Erilyan to report on trees within the site of Northside West Clinic Stage 2, 23-27 Lytton Street, Wentworthville NSW. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention within the context of the proposed development. The scope of this report includes all trees within areas that may be impacted by the proposed development.

On the 30th of April 2021, Glenn Bird of Birds Tree Consultancy attended site and inspected the subject trees from the ground. There was no aerial inspection carried out. A Visual Tree Assessment was undertaken in accordance with Visual Tree Assessment (VTA) guidelines (Mattheck and Breloer, 1994). Tree heights were measured using a Nikon Forestry 550 Heightmeter.

## **2.0 Site Analysis**

### **2.1 Site**

The subject site is Northside West Clinic Stage 2, 23-27 Lytton Street, Wentworthville NSW. The subject trees are located within or adjacent to the boundaries of this site. This site is currently an existing residential medical facility. The site is proposed for redevelopment including the demolition of existing buildings and building of new buildings, carparking, entry roads, pedestrian links and associated landscape works.

### **2.2 Documentation**

This Development Impact Assessment Report has been compiled based on the following documentation provided:

1. Team 2 Architectural Drawings Revision P1 dated 11/02/2021

### **2.3 Topography**

The site slopes from the highest point on Lytton Street to the lowest point on the western boundary. Refer to detailed survey for detailed levels.

### **2.4 Identification**

Trees are as identified in the attached inspection forms in Appendix C and shown in Tree location Plan A01 in Appendix D. The subject trees have previously been assessed within Naturally Trees Report dated 04 March 2019 and Tree Numbering has been retained from this previous report.

### **2.5 Soils**

Soil material and horizons were not tested for this report.

### 3.0 Existing Trees

The following trees were inspected from the ground and the following items identified. Please refer also to the attached inspection data in Appendix C.

- 3.1. Tree 3 *Eucalyptus microcorys***  
This mature tree is approximately 21m tall with a canopy spread of 12m. It has a single trunk with a diameter at breast height (DBH) of 460mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.2. Tree 4 *Eucalyptus microcorys***  
This mature tree is approximately 20m tall with a canopy spread of 8m. It has a single trunk with a DBH of 330mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.3. Tree 5 *Eucalyptus microcorys***  
This mature tree is approximately 24m tall with a canopy spread of 15m. It has a single trunk with a DBH of 650mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.4. Tree 6 *Lophostemon confertus***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has a single trunk with a DBH of 300mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.5. Tree 16 *Eucalyptus microcorys***  
This mature tree is approximately 18m tall with a canopy spread of 12m. It has twin co-dominant trunks from the base with an aggregate DBH of 560mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.6. Tree 17 *Eucalyptus microcorys***  
This mature tree is approximately 18m tall with a canopy spread of 9m. It has a single trunk with a DBH of 440mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.7. Tree 18 *Cupressus spp***  
This mature tree is approximately 9m tall with a canopy spread of 7m. It has a single trunk with a DBH of 330mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.8. Tree 19 *Gleditsia triacanthos***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has a single trunk with a DBH of 200mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



- 3.9. Tree 20 *Melaleuca quinquenervia***  
This mature tree is approximately 12m tall with a canopy spread of 5m. It has a single trunk with a DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.10. Tree 21 *Melaleuca quinquenervia***  
This mature tree is approximately 7m tall with a canopy spread of 5m. It has a single trunk with a DBH of 400mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.11. Tree 22 *Melaleuca quinquenervia***  
This mature tree is approximately 11m tall with a canopy spread of 4m. It has a single trunk with a DBH of 180mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.12. Tree 23 *Melaleuca quinquenervia***  
This mature tree is approximately 13m tall with a canopy spread of 4m. It has twin co-dominant trunks from the base with an aggregate DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.13. Tree 24 *Melaleuca quinquenervia***  
This mature tree is approximately 11m tall with a canopy spread of 4m. It has twin co-dominant trunks from the base with an aggregate DBH of 260mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.14. Tree 25 *Melaleuca quinquenervia***  
This mature tree is approximately 11m tall with a canopy spread of 4m. It has a single trunk with a DBH of 300mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.15. Tree 26 *Melaleuca quinquenervia***  
This mature tree is approximately 10m tall with a canopy spread of 4m. It has twin co-dominant trunks from 1.5m above the base with a DBH of 180mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.16. Tree 27 *Eucalyptus nicholii***  
This mature tree is approximately 14m tall with a canopy spread of 11m. It has a single trunk with a DBH of 610mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.17. Tree 28 *Casuarina cunninghamiana***  
This mature tree is approximately 16m tall with a canopy spread of 8m. It has a single trunk with a DBH of 360mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.18. Tree 29 *Casuarina cunninghamiana***  
This mature tree is approximately 18m tall with a canopy spread of 8m. It has a single trunk with a DBH of 470mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.19. Tree 30 *Casuarina cunninghamiana***  
This mature tree is approximately 16m tall with a canopy spread of 11m. It has a single trunk with a DBH of 420mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.20. Tree 31 *Sapium sebiferum***  
This mature tree is approximately 8m tall with a canopy spread of 7m. It has a single trunk with a DBH of 280mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.21. Tree 32 *Melaleuca salicina***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has multiple (3) co-dominant trunks from the base with an aggregate DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.22. Tree 33 *Melaleuca salicina***  
This mature tree is approximately 9m tall with a canopy spread of 6m. It has multiple (3) co-dominant trunks from the base with an aggregate DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.23. Tree 34 *Melaleuca salicina***  
This mature tree is approximately 10m tall with a canopy spread of 8m. It has twin co-dominant trunks from the base with an aggregate DBH of 310mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.24. Tree 35 *Casuarina cunninghamiana***  
This mature tree is approximately 15m tall with a canopy spread of 8m. It has a single trunk with a DBH of 250mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.25. Tree 36 *Casuarina cunninghamiana***  
This mature tree is approximately 15m tall with a canopy spread of 8m. It has a single trunk with a DBH of 320mm. This tree is in poor health and condition with significant deadwood and minimal epicormic growth.
- 3.26. Tree 37 *Sapium sebiferum***  
This mature tree is approximately 8m tall with a canopy spread of 7m. It has a single trunk with a DBH of 230mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.27. Tree 38 *Eucalyptus saligna***  
This mature tree is approximately 26m tall with a canopy spread of 16m. It has a single trunk with a DBH of 630mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.28. Tree 39 *Eucalyptus microcorys***  
This mature tree is approximately 26m tall with a canopy spread of 14m. It has a single trunk with a DBH of 630mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.29. Tree 40 *Eucalyptus microcorys***  
This mature tree is approximately 19m tall with a canopy spread of 14m. It has a single trunk with a DBH of 480mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.30. Tree 41 *Eucalyptus microcorys***  
This mature tree is approximately 14m tall with a canopy spread of 9m. It has a single trunk with a DBH of 490mm. This tree is in good health and condition with minimal deadwood and epicormic growth. There is longitudinal swelling indicative of a bark inclusion in the primary junction. A Level 2 (TRAQ) Risk assessment is recommended for this tree.



**Figure 1 - Bark inclusion in Tree 41**

- 3.31. Tree 42 *Eucalyptus microcorys***  
This mature tree is approximately 18m tall with a canopy spread of 9m. It has a single trunk with a DBH of 470mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.32. Tree 43 *Eucalyptus microcorys***  
This mature tree is approximately 18m tall with a canopy spread of 15m. It has a single trunk with a DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.33. Tree 44 *Syncarpia glomulifera***  
This mature tree is approximately 13m tall with a canopy spread of 7m. It has a single trunk with a DBH of 390mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.34. Tree 45 *Eucalyptus microcorys***  
This mature tree is approximately 16m tall with a canopy spread of 14m. It has a single trunk with a DBH of 530mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.35. Tree 46 *Eucalyptus microcorys***  
This mature tree is approximately 16m tall with a canopy spread of 12m. It has a single trunk with a DBH of 380mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.36. Tree 47 *Eucalyptus microcorys***  
This mature tree is approximately 17m tall with a canopy spread of 14m. It has a single trunk with a DBH of 610mm. This tree is in good health and condition with minimal deadwood and epicormic growth. There is decay evident in structural root.
- 3.37. Tree 48 *Casuarina cunninghamiana***  
This mature tree is approximately 17m tall with a canopy spread of 14m. It has a single trunk with a DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.38. Tree 49 *Eucalyptus robusta***  
This mature tree is approximately 19m tall with a canopy spread of 14m. It has a single trunk with a DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.39. Tree 50 *Eucalyptus saligna***  
This semi-mature tree is approximately 18m tall with a canopy spread of 5m. It has a single trunk with a DBH of 280mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.40. Tree 51 *Casuarina cunninghamiana***  
This mature tree is approximately 14m tall with a canopy spread of 8m. It has a single trunk with a DBH of 280mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.41. Tree 52 *Corymbia citriodora***  
This mature tree is approximately 14m tall with a canopy spread of 8m. It has a single trunk with a DBH of 270mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.42. Tree 53 *Melaleuca quinquenervia***  
This mature tree is approximately 24m tall with a canopy spread of 11m. It has a single trunk with a DBH of 410mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.43. Tree 54 *Melaleuca salicina***  
This mature tree is approximately 6m tall with a canopy spread of 4m. It has a single trunk with a DBH of 250mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.44. Tree 55 *Melaleuca salicina***  
This mature tree is approximately 8m tall with a canopy spread of 4m. It has a single trunk with a DBH of 250mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

## 4.0 Landscape Significance of Trees

### 4.1 Landscape Significance

The significance of a tree within the landscape is a factor of the health and condition of the tree, vitality, the form of the tree, environmental, cultural, amenity and heritage value.

### 4.2 Methodology of Determining Landscape Significance

For the purpose of this report, the Significance of a Tree, Assessment Rating System (STARS) as developed by the Institute of Australian Consulting Arborists (IACA) has been implemented. Please refer to Appendix A for greater detail of this assessment system. This system defines Landscape Significance for individual trees as High, Medium or Low Significance.

### 4.3 Landscape Significance of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Significance of a Tree, Assessment Rating System, the Landscape Significance of the Subject Trees was determined as shown in Table 1.

Tree no.	Species	Landscape Significance
3	<i>Eucalyptus microcorys</i>	Medium
4	<i>Eucalyptus microcorys</i>	Medium



5	<i>Eucalyptus microcorys</i>	Medium
6	<i>Lophostemon confertus</i>	Medium
16	<i>Eucalyptus microcorys</i>	Medium
17	<i>Eucalyptus microcorys</i>	Medium
18	<i>Cupressus spp</i>	Medium
19	<i>Gleditsia triacanthos</i>	Medium
20	<i>Melaleuca quinquenervia</i>	Medium
21	<i>Melaleuca quinquenervia</i>	Medium
22	<i>Melaleuca quinquenervia</i>	Medium
23	<i>Melaleuca quinquenervia</i>	Medium
24	<i>Melaleuca quinquenervia</i>	Medium
25	<i>Melaleuca quinquenervia</i>	Medium
26	<i>Melaleuca quinquenervia</i>	Medium
27	<i>Eucalyptus nicholii</i>	Medium
28	<i>Casuarina cunninghamiana</i>	Medium
29	<i>Casuarina cunninghamiana</i>	Medium
30	<i>Casuarina cunninghamiana</i>	Medium
31	<i>Sapium sebiferum</i>	Medium
32	<i>Melaleuca salicina</i>	Medium
33	<i>Melaleuca salicina</i>	Medium
34	<i>Melaleuca salicina</i>	Medium
35	<i>Casuarina cunninghamiana</i>	Medium
36	<i>Casuarina cunninghamiana</i>	Medium
37	<i>Sapium sebiferum</i>	Medium
38	<i>Eucalyptus saligna</i>	Medium
39	<i>Eucalyptus microcorys</i>	Medium
40	<i>Eucalyptus microcorys</i>	Medium
41	<i>Eucalyptus microcorys</i>	Medium
42	<i>Eucalyptus microcorys</i>	Medium
43	<i>Eucalyptus microcorys</i>	Medium
44	<i>Syncarpia glomulifera</i>	Medium
45	<i>Eucalyptus microcorys</i>	Medium
46	<i>Eucalyptus microcorys</i>	Medium
47	<i>Eucalyptus microcorys</i>	Medium
48	<i>Casuarina cunninghamiana</i>	Medium
49	<i>Eucalyptus robusta</i>	Medium
50	<i>Eucalyptus saligna</i>	Medium
51	<i>Casuarina cunninghamiana</i>	Medium
52	<i>Corymbia citriodora</i>	Medium
53	<i>Melaleuca quinquenervia</i>	Medium
54	<i>Melaleuca salicina</i>	Medium
55	<i>Melaleuca salicina</i>	Medium

**Table 1 - Landscape Significance**

## 5.0 Subject Tree Retention Value

### 5.1 Tree Retention Value Methodology

For the purpose of this report, the Tree Retention Values have been assessed by incorporating Landscape Significance Values as determined in 4.0 with the Useful Life Expectancy of the subject trees and assessing the retention values based on the Tree Retention Value Priority Matrix as developed by the Institute of Australian Consulting Arborists (IACA). Please refer to Appendix B for greater detail of this Tree Retention Value Priority Matrix. This matrix defines Landscape Significance for individual trees as High, Medium or Low Retention Value as well as Priority for Removal.

### 5.2 Retention Value of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Tree Retention Value Priority Matrix, the Retention Values of the Subject Trees were determined as shown in Table 2.

Tree no.	Species	Retention Value
3	<i>Eucalyptus microcorys</i>	Medium
4	<i>Eucalyptus microcorys</i>	Medium
5	<i>Eucalyptus microcorys</i>	Medium
6	<i>Lophostemon confertus</i>	Medium
16	<i>Eucalyptus microcorys</i>	Medium
17	<i>Eucalyptus microcorys</i>	Medium
18	<i>Cupressus spp</i>	Medium
19	<i>Gleditsia triacanthos</i>	Medium
20	<i>Melaleuca quinquenervia</i>	Medium
21	<i>Melaleuca quinquenervia</i>	Medium
22	<i>Melaleuca quinquenervia</i>	Medium
23	<i>Melaleuca quinquenervia</i>	Medium
24	<i>Melaleuca quinquenervia</i>	Medium
25	<i>Melaleuca quinquenervia</i>	Medium
26	<i>Melaleuca quinquenervia</i>	Medium
27	<i>Eucalyptus nicholii</i>	Medium
28	<i>Casuarina cunninghamiana</i>	Medium
29	<i>Casuarina cunninghamiana</i>	Medium
30	<i>Casuarina cunninghamiana</i>	Medium
31	<i>Sapium sebiferum</i>	Medium
32	<i>Melaleuca salicina</i>	Medium
33	<i>Melaleuca salicina</i>	Medium
34	<i>Melaleuca salicina</i>	Medium
35	<i>Casuarina cunninghamiana</i>	Medium
36	<i>Casuarina cunninghamiana</i>	Low
37	<i>Sapium sebiferum</i>	Medium
38	<i>Eucalyptus saligna</i>	Medium

39	<i>Eucalyptus microcorys</i>	Medium
40	<i>Eucalyptus microcorys</i>	Medium
41	<i>Eucalyptus microcorys</i>	Medium
42	<i>Eucalyptus microcorys</i>	Medium
43	<i>Eucalyptus microcorys</i>	Medium
44	<i>Syncarpia glomulifera</i>	Medium
45	<i>Eucalyptus microcorys</i>	Medium
46	<i>Eucalyptus microcorys</i>	Medium
47	<i>Eucalyptus microcorys</i>	Medium
48	<i>Casuarina cunninghamiana</i>	Medium
49	<i>Eucalyptus robusta</i>	Medium
50	<i>Eucalyptus saligna</i>	Medium
51	<i>Casuarina cunninghamiana</i>	Medium
52	<i>Corymbia citriodora</i>	Medium
53	<i>Melaleuca quinquenervia</i>	Medium
54	<i>Melaleuca salicina</i>	Medium
55	<i>Melaleuca salicina</i>	Medium

**Table 2 – Tree Retention Value**

## 6.0 Impact of Development

### 6.1 Tree Protection Zone

Tree Protection Zones (TPZs) have been defined for the subject trees in order to define the encroachment of the proposed development in accordance with AS4970-2009. The TPZs required have been taken as a circular area with a radius 12 x the diameter at breast height of the tree. This requirement is in line with Australian Standard AS 4970-2009 Protection of Trees on Development Sites. This standard defines a maximum of 10% encroachment to be minimal encroachment. Any encroachment over 10% requires the site arborist to give consideration as to the viability of the tree due to the proposed development.

### 6.2 Structural Root Zone

Structural Root Zone (SRZs) are defined by AS4970-2009 as the area of root development required for the structural stability of the tree. The SRZ is required to be assessed only when an encroachment greater than 10% is considered.

Tree no.	Species	TPZ Radius (m)	Encroachment (%)	SRZ Radius (m)
3	<i>Eucalyptus microcorys</i>	5.52	25	2.47
4	<i>Eucalyptus microcorys</i>	3.96	100	2.25
5	<i>Eucalyptus microcorys</i>	7.8	100	2.85
6	<i>Lophostemon confertus</i>	3.6	100	2.25
16	<i>Eucalyptus microcorys</i>	6.72	0	2.85
17	<i>Eucalyptus microcorys</i>	5.28	0	2.47



18	<i>Cupressus spp</i>	3.96	0	2.13
19	<i>Gleditsia triacanthos</i>	2.4	0	2.00
20	<i>Melaleuca quinquenervia</i>	4.2	0	2.25
21	<i>Melaleuca quinquenervia</i>	4.8	100	2.37
22	<i>Melaleuca quinquenervia</i>	2.16	100	1.75
23	<i>Melaleuca quinquenervia</i>	4.2	100	2.25
24	<i>Melaleuca quinquenervia</i>	3.12	100	2.13
25	<i>Melaleuca quinquenervia</i>	3.6	100	2.13
26	<i>Melaleuca quinquenervia</i>	2.16	100	1.85
27	<i>Eucalyptus nicholii</i>	7.32	100	2.85
28	<i>Casuarina cunninghamiana</i>	4.32	100	2.37
29	<i>Casuarina cunninghamiana</i>	5.64	100	2.57
30	<i>Casuarina cunninghamiana</i>	5.04	100	2.37
31	<i>Sapium sebiferum</i>	3.36	100	2.00
32	<i>Melaleuca salicina</i>	4.2	100	2.37
33	<i>Melaleuca salicina</i>	4.2	100	2.25
34	<i>Melaleuca salicina</i>	3.72	100	2.30
35	<i>Casuarina cunninghamiana</i>	3	100	2.00
36	<i>Casuarina cunninghamiana</i>	3.84	100	2.25
37	<i>Sapium sebiferum</i>	2.76	100	2.00
38	<i>Eucalyptus saligna</i>	7.56	25	2.85
39	<i>Eucalyptus microcorys</i>	7.56	100	2.93
40	<i>Eucalyptus microcorys</i>	5.76	100	2.57
41	<i>Eucalyptus microcorys</i>	5.88	18	2.47
42	<i>Eucalyptus microcorys</i>	5.64	100	2.47
43	<i>Eucalyptus microcorys</i>	6.12	100	2.67
44	<i>Syncarpia glomulifera</i>	4.68	0	2.37
45	<i>Eucalyptus microcorys</i>	6.36	0	2.71
46	<i>Eucalyptus microcorys</i>	4.56	0	2.37
47	<i>Eucalyptus microcorys</i>	7.32	25	2.85
48	<i>Casuarina cunninghamiana</i>	6.12	15	2.67
49	<i>Eucalyptus robusta</i>	6.12	13	2.67
50	<i>Eucalyptus saligna</i>	3.36	100	2.13
51	<i>Casuarina cunninghamiana</i>	3.36	45	2.13
52	<i>Corymbia citriodora</i>	3.24	0	2.00
53	<i>Melaleuca quinquenervia</i>	4.92	0	2.47
54	<i>Melaleuca salicina</i>	3	100	2.00
55	<i>Melaleuca salicina</i>	3	100	2.00

## 6.3 Development Impact

### 6.3.1. Tree 3 *Eucalyptus microcorys*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 25% which is significantly greater than the minor encroachment as defined by AS 4970-2009. This tree will not be viable to be retained under the proposed development.

### 6.3.2. Tree 4 *Eucalyptus microcorys*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

### 6.3.3. Tree 5 *Eucalyptus microcorys*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

### 6.3.4. Tree 6 *Lophostemon confertus*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

### 6.3.5. Tree 16 *Eucalyptus microcorys*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 6.3.6. Tree 17 *Eucalyptus microcorys*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 6.3.7. Tree 18 *Cupressus spp*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 6.3.8. Tree 19 *Gleditsia triacanthos*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be

further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

- 6.3.9. Tree 20 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.10. Tree 21 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.11. Tree 22 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.12. Tree 23 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.13. Tree 24 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.14. Tree 25 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.15. Tree 26 *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.16. Tree 27 *Eucalyptus nicholii***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

- 6.3.17. Tree 28 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.18. Tree 29 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.19. Tree 30 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.20. Tree 31 *Sapium sebiferum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.21. Tree 32 *Melaleuca salicina***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.22. Tree 33 *Melaleuca salicina***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.23. Tree 34 *Melaleuca salicina***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.24. Tree 35 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

- 6.3.25. Tree 36 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.26. Tree 37 *Sapium sebiferum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.27. Tree 38 *Eucalyptus saligna***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 25% which is significantly greater than the minor encroachment as defined by AS 4970-2009. This tree will not be viable to be retained under the proposed development.
- 6.3.28. Tree 39 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.29. Tree 40 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.30. Tree 41 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 18% which is slightly greater than the minor encroachment as defined by AS 4970-2009. Based on consideration of existing structures and this species tolerance to root disturbance in accordance with clause 3.3.4 of AS 4970-2009, this tree will be viable to be retained under the proposed development.
- 6.3.31. Tree 42 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

- 6.3.32. Tree 43 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.33. Tree 44 *Syncarpia glomulifera***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.34. Tree 45 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.35. Tree 46 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.36. Tree 47 *Eucalyptus microcorys***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 25% which is significantly greater than the minor encroachment as defined by AS 4970-2009. This tree will not be viable to be retained under the proposed development.
- 6.3.37. Tree 48 *Casuarina cunninghamiana***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 15% which is slightly greater than the minor encroachment as defined by AS 4970-2009. Based on consideration of existing structures and this species tolerance to root disturbance in accordance with clause 3.3.4 of AS 4970-2009, this tree will be viable to be retained under the proposed development.
- 6.3.38. Tree 49 *Eucalyptus robusta***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 13% which is slightly greater than the minor encroachment as defined by AS 4970-2009. Based on consideration of existing structures and this species tolerance to root disturbance in accordance with clause 3.3.4 of AS 4970-2009, this tree will be viable to be retained under the proposed development.

- 6.3.39. Tree 50 *Eucalyptus saligna***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.40. Tree 51 *Casuarina cunninghamiana***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 45% which is significantly greater than the minor encroachment as defined by AS 4970-2009. This tree will not be viable to be retained under the proposed development.
- 6.3.41. Tree 52 *Corymbia citriodora***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.42. Tree 53 *Melaleuca quinquenervia***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 6.3.43. Tree 54 *Melaleuca salicina***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 6.3.44. Tree 55 *Melaleuca salicina***  
 The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

## 7.0 Recommendations

The subject Trees are preserved under Part A 4.1 of Cumberland Council (Holroyd) Development Control Plan 2013 with the exception of Tree 19 which is an exempt species.

The subject trees have a live canopy cover of approximately 1975m<sup>2</sup>. Based on the subject trees not viable to be retained as assessed in this report, this live canopy cover is reduced by approximately 1100m<sup>2</sup> to 875m<sup>2</sup>. This assessment of canopy cover does not include new tree planting. Please refer to the Landscape Design for proposed planting canopy cover.

Tree 36 is in poor and declining condition with a short useful life expectancy.

Tree 41 has a bark inclusion within the primary junction which places this tree at increased risk of failure at this point. In consideration of the future development and the increased number of targets and therefore increased hazard posed, we recommend that a Level 2 (TRAQ) Risk Assessment be carried out on this tree to determine the level of risk and viability of the tree for retention.

The Tree Protection Zones (TPZ) Trees 3, 4, 5, 6, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 50, 51, 54 and 55 are encroached by the proposed construction and required earthworks by a total or major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. These trees will not be viable to be retained and will be required to be removed due to the proposed development.

The TPZ of Tree 47 is encroached by the proposed construction and required earthworks by major encroachment as defined by *AS4970-2009*. These trees will not be viable to be retained based on this encroachment, however this tree is located on the adjacent property and is required to be protected. Further investigation by means of root mapping is required to determine the extent of root development within the area of the existing carpark at the line of the proposed building.

The proposed building line will impact on the canopies of 41, 47, 48 and 49 and will require canopy reduction pruning of these trees. Trees 41, 48 and 49 will require less than 10% of the canopy to be reduced. Tree 41 will require canopy reduction of approximately 20% of the canopy. All canopy reduction is to be carried out in accordance with *AS4373-2007 Pruning of Amenity Trees* by qualified arborists with minimum AQF Level 3 qualifications under the Supervision and direction of the Site Arborist. Prior to pruning works and site-specific Pruning Specification is to be prepared.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

Tree no.	Species	Recommendations	Comments
3	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.



4	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
5	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
6	<i>Lophostemon confertus</i>	Remove	Not viable to be retained due to impact of proposed development.
16	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
17	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
18	<i>Cupressus spp</i>	Retain	Viable to be retained and protected in accordance with 8.0.
19	<i>Gleditsia triacanthos</i>	Retain	Viable to be retained and protected in accordance with 8.0. <b>Exempt from DCP.</b>
20	<i>Melaleuca quinquenervia</i>	Retain	Viable to be retained and protected in accordance with 8.0.
21	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
22	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
23	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
24	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
25	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
26	<i>Melaleuca quinquenervia</i>	Remove	Not viable to be retained due to impact of proposed development.
27	<i>Eucalyptus nicholii</i>	Remove	Not viable to be retained due to impact of proposed development.
28	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
29	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.

30	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
31	<i>Sapium sebiferum</i>	Remove	Not viable to be retained due to impact of proposed development.
32	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
33	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
34	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
35	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
36	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
37	<i>Sapium sebiferum</i>	Remove	Not viable to be retained due to impact of proposed development.
38	<i>Eucalyptus saligna</i>	Remove	Not viable to be retained due to impact of proposed development.
39	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
40	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
41	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0. Evidence of a bark inclusion in primary junction. TRAQ Level 2 Risk assessment recommended.
42	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
43	<i>Eucalyptus microcorys</i>	Remove	Not viable to be retained due to impact of proposed development.
44	<i>Syncarpia glomulifera</i>	Retain	Viable to be retained and protected in accordance with 8.0.
45	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.

46	<i>Eucalyptus microcorys</i>	Retain	Viable to be retained and protected in accordance with 8.0.
47	<i>Eucalyptus microcorys</i>	Design amendments or further investigation required.	Not viable to be retained due to impact of proposed development. Tree required to be retained.
48	<i>Casuarina cunninghamiana</i>	Retain	Viable to be retained and protected in accordance with 8.0.
49	<i>Eucalyptus robusta</i>	Retain	Viable to be retained and protected in accordance with 8.0.
50	<i>Eucalyptus saligna</i>	Remove	Not viable to be retained due to impact of proposed development.
51	<i>Casuarina cunninghamiana</i>	Remove	Not viable to be retained due to impact of proposed development.
52	<i>Corymbia citriodora</i>	Retain	Viable to be retained and protected in accordance with 8.0.
53	<i>Melaleuca quinquenervia</i>	Retain	Viable to be retained and protected in accordance with 8.0.
54	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.
55	<i>Melaleuca salicina</i>	Remove	Not viable to be retained due to impact of proposed development.

## 8.0 Pre-Construction Tree Protection Measures

### 8.1 General

All tree protection works shall be carried out before excavation, grading and site works commence. Tree protection works shall be inspected and approved by a Consulting Arborist meeting AQF Level 5 prior to construction works commencing.

Storage of materials, mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refueling, site office and sheds, and the lighting of fires, stockpiling of soil, rubble or any debris shall not be carried out within the TPZ of existing trees. No backfilling shall occur within the TPZ of existing trees. Trees shall not be removed or lopped unless specific instruction is given in writing by the Superintendent.

### 8.2 Identification

All trees to be protected shall be clearly identified and all TPZs surveyed.

### **8.3 Site Arborist**

Prior to all site works commencing, a Site Arborist is to be appointed with the responsibility of implementing all Tree Protection Measures in this report as well as compliance with AS4970-2009 Protection of Trees on Development Sites. The Site Arborist is to hold qualifications equivalent of AQF Level 5.

### **8.4 Protective Fence**

Fencing is to be erected around existing trees to be retained. In addition to this protective fencing within the site, Protective Fencing is to be installed to the full extent of the TPZs within the site. This fencing is to be erected prior to any materials being brought on site or before any site, civil works or construction works commence. The fence shall enclose a sufficient area so as to prevent damage to the TPZ as defined on Appendix D Tree Protection Plan and as defined in 5.1 above. Fence to comprise 1800mm high chain wire mesh fixed to 50mm diameter Galvanised steel posts. Panels should be securely fixed top and bottom to avoid separation. No storage of building materials, tools, paint, fuel or contaminants and the like shall occur within the fenced area.

### **8.5 Mulching**

Install mulch to the extent of all tree protection fencing. Use a leaf mulch conforming to AS 4454 which is free of deleterious and extraneous matter such as soil, weeds, sticks and stones and consisting of a minimum of 90% recycled content compliant with AS 4454 (1999) and AS 4419 (1998). All trees marked as to be removed on the proposed development are to be chipped and reused for this purpose. Place mulch evenly and to a depth of 100mm.

### **8.6 Signage**

Prior to works commencing, tree protection signage is to be attached to each tree protection zone, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

Tree protection zone.

- This fence has been installed to prevent damage to the trees and their growing environment both above and below ground and access is restricted.
- No Access within Tree Protection Zone
- The name, address, and telephone number of the developer.

The name and telephone number of the Site Arborist.

## 8.7 Trunk and Branch Protection

Where a tree is to be retained and a Tree Protection Zone cannot be adequately established due to restricted access, the trunk and branches in the lower crown will be protected by wrapping 2 layers of hessian or carpet underfelt around the trunk and branches for a minimum of 2 m or as lower branches permit, then metal strapping secures 38x50 x2000 mm timber battens together around the trunk (do not nail or screw to the trunk or branches). The number of battens to be used is as required to encircle the trunk and the battens are to extend to the base of the tree (AS4970 2009 Protection of trees on development sites, Figure 3 Examples of Trunk, Branch and ground protection).

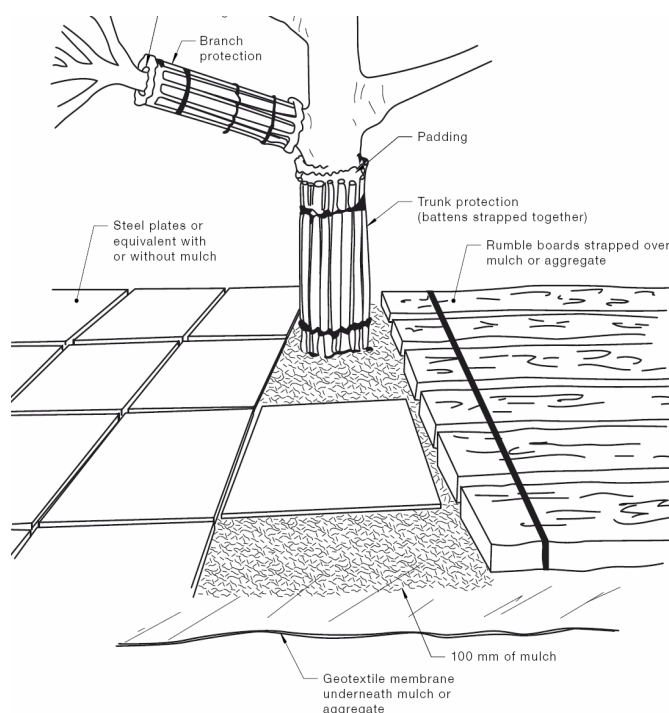


Figure 2 - Trunk Protection

## 9.0 Site Management Issues

### 9.1 Soil Compaction

Plant and pedestrian traffic during the construction period will cause significant soil compaction. This will be exacerbated by increased water expected on these soils as result of adjacent construction and weather. Compaction of the soil within the TPZ will reduce the voids between soil peds or particles therefore will reduce the gaseous exchange capacity of the root system which will slow critical metabolic processes. No pedestrian or plant access is permissible to the TPZ.

### 9.2 Site Access

Sufficient access is required to enable efficient construction. It is essential to delineate access zones or corridors which will provide suitable access without damaging the existing trees to be retained or causing compaction to the root zone.

### **9.3 Excavation within Tree Protection Area**

No excavation is to be carried out within the TPZs of retained trees without the permission and supervision of the Site Arborist (AQF5)

### **9.4 Possible Contamination / Storage of Materials**

The construction site will require the use of many chemicals and materials that are possible contaminants which if not managed will pose a risk to the existing trees. These possible contaminants include fuels, herbicides, solvents and the like. A site-specific Environmental Management Plan shall be provided, and this specific risk identified and addressed.

## **10.0 Tree Protection Measures During Construction**

### **10.1 Maintenance of Pre-Construction Tree Protection Measures**

The Pre-Construction Tree Protection Measures identified in 5.0 above are to be maintained in good and serviceable condition throughout the construction period.

### **10.2 Possible Contaminants**

Do not store or otherwise place bulk materials and harmful materials under or near trees. Do not place spoil from excavations within the TPZs. Prevent wind-blown materials such as cement from harming trees. All possible contaminants are to be stored in a designated and appropriate area with secure chemical spill measures such as a bund in place.

### **10.3 Physical Damage**

Prevent damage to tree. Do not attach stays, guys and the like to trees. No personnel, plant, machinery or materials are to be allowed within the tree protection fencing.

### **10.4 Compaction**

No filling or compaction shall occur over tree roots zones within tree protection fenced areas. Where construction occurs close to or the TPZ of trees to be retained it shall be necessary to install protection to avoid compaction of the ground surface. This protection is to be planks supported clear of the ground fixed to scaffolding.

### **10.5 Trenching**

No Trenching should be necessary within the TPZs or within tree protection fencing. No further trenching is to be carried out without the approval of the Site Arborist. Should any further trenching be required within the TPZs identified, this work is to be carried out by hand and under the supervision of a qualified Arborist.

### **10.6 Irrigation/Watering**

Contractor is to ensure that soil moisture levels are adequately maintained. Apply water at an appropriate rate suitable for the species during periods of little or no rainfall.

### **10.7 Site Sheds / Amenities/ Storage**

Site sheds, site amenities, ablutions and site storage shall be in the area clear of all TPZ. Chemicals and potential contaminants are to be stored appropriately and this

storage area is to be enclosed by a chemical spill bund to prevent the potential run off of contaminants in the event of a spillage or accident.

## **11.0 Environmental / Heritage/ Legislative Considerations**

None of the subject trees are identified as threatened species or elements of endangered ecological communities within the NSW Biodiversity Conservation Act 2016.

## **12.0 References**

Mattheck, C. Breloer, K. 1993, The Body Language of Trees: A Handbook for Failure Analysis, 12th Impression 2010 The Stationery Office.  
AS4970-2009 Protection of Trees on Development Sites: Standards Australia

## **13.0 Disclaimer**

This Appraisal has been prepared for the exclusive use of the Client and Birds Tree Consultancy.

Birds Tree Consultancy accepts no responsibility for its use by other persons. The Client acknowledges that this Appraisal, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained Birds Tree Consultancy and referred to in the Appraisal. The Client should rely on the Appraisal, and on its contents, only to that extent.

Every effort has been made in this report to include, assess and address all defects, structural weaknesses, instabilities and the like of the subject trees. All inspections were made from ground level using only visual means and no intrusive or destructive means of inspection were used. For many structural defects such as decay and inclusions, internal inspection is required by means of Resistograph or similar. No such investigation has been made in this case. Trees are living organisms and are subject to failure through a variety of causes not able to be identified by means of this inspection and report.

### IACA Significance of a Tree, Assessment Rating System (STARS) © (IACA 2010) ©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

#### **Tree Significance - Assessment Criteria**



##### **1. High Significance in landscape**

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

##### **2. Medium Significance in landscape**

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

##### **3. Low Significance in landscape**

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

##### **Environmental Pest / Noxious Weed Species**



- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
  - The tree is a declared noxious weed by legislation.
- Hazardous/Irreversible Decline**
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
  - The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

**The tree is to have a minimum of three (3) criteria in a category to be classified in that group.**

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

## Appendix B Tree Retention Values

		Significance				
		1. High		2. Medium	3. Low	
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					

Legend for Matrix Assessment

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MANAGING URBAN TREES®

**Priority for Retention (High)** - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 *Protection of trees on development sites*. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.

**Consider for Retention (Medium)** - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.

**Consider for Removal (Low)** - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

**Priority for Removal** - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

### REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, [www.icomos.org/australia](http://www.icomos.org/australia)

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, [www.footprintgreen.com.au](http://www.footprintgreen.com.au)

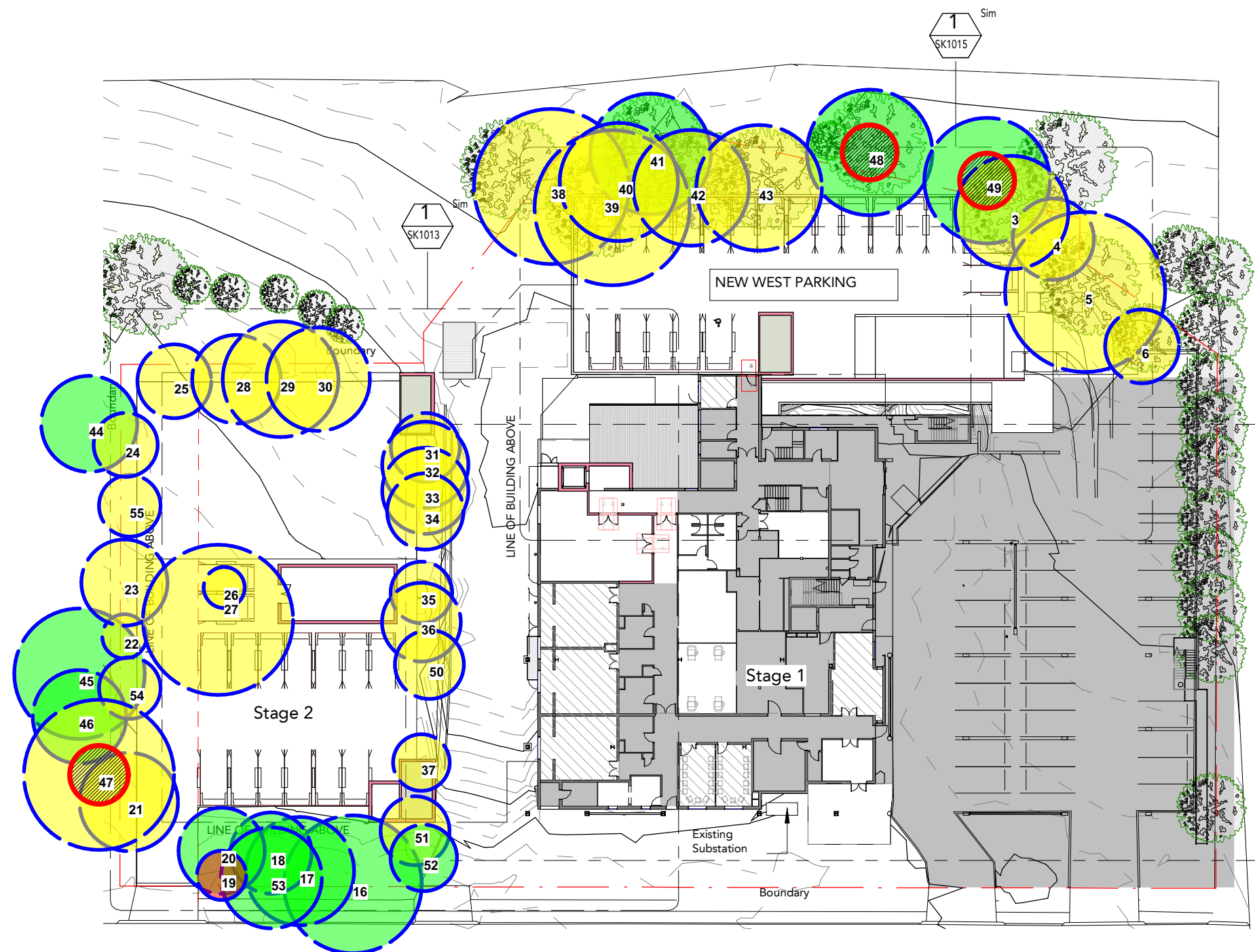
## Appendix C - Tree Inspection Data

Consulting Arborist • Project Management • Horticultural Consultancy • Landscape Management

30-Apr-21

Tree no.	Species	Height (m)	Spread(m)	DBH (mm)	TPZ Radius (m)	Dia at base	SRZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Stability	Branching Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest Infestation	Disease	Life expectancy	Env. & Landscape significance	Retention Value	Notes/Comments
41	Eucalyptus microcorys	14	9	490	5.88	500	2.47	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Bark inclusion	No evidence	Bark inclusion	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	Evidence of a bark inclusion in primary junction. Recommend TRAQ Level 2 Risk assessment
42	Eucalyptus microcorys	18	9	470	5.64	500	2.47	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
43	Eucalyptus microcorys	18	15	510	6.12	600	2.67	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
44	Syncarpia glomulifera	13	7	390	4.68	450	2.37	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
45	Eucalyptus microcorys	16	14	530	6.36	620	2.71	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
46	Eucalyptus microcorys	16	12	380	4.56	450	2.37	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
47	Eucalyptus microcorys	17	14	610	7.32	700	2.85	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Evidence of decay	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	Decay evident in structural root
48	Casuarina cunninghamiana	17	14	510	6.12	600	2.67	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
49	Eucalyptus robusta	19	14	510	6.12	600	2.67	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
50	Eucalyptus saligna	18	5	280	3.36	350	2.13	Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	40y+	Medium	Medium	
51	Casuarina cunninghamiana	14	8	280	3.36	350	2.13	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
52	Corymbia citriodora	14	8	270	3.24	300	2.00	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
53	Melaleuca quinquenervia	24	11	410	4.92	500	2.47	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
54	Melaleuca salicina	6	4	250	3	300	2.00	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	
55	Melaleuca salicina	8	4	250	3	300	2.00	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Nil	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium	

## Appendix D - Tree Location Plan



### Legend

- Tree to be Retained and Protected
- Tree Exempt from Cumberland Council DCP
- Tree Not Viable to be Retained due to Proposed Development
- Tree Protection Zone (TPZ) in accordance with AS4970-2009
- Structural Root Zone (SRZ) in accordance with AS4970-2009

## Birds Tree Consultancy

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Project: 23-27 Lytton Street Wentworthville  
 Client: Erilyan  
 DWG: A01 Revision A  
 Plan: Tree Location Plan 01  
 Date: 14 Dec 2021 Scale : 1:500 @ A3