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Arboricultural Impact Assessment Report

Site location:
120-122 Mona Vale Road
Warriewood NSW

Prepared for: Opera Properties Pty Ltd

Prepared by: Bryce Claassens
Urban Arbor Pty Ltd
Date Prepared: 3 October 2024
Ref: 241003_120 Mona Vale Rd_AIA
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1. INTRODUCTION

1.1 Urban Arbor have been instructed by Opera Properties Pty Ltd to provide an Arboricultural Impact Assessment Report for trees located within the site and adjoining sites in relation to a proposed development.

1.2 Below is a list of all documents and information provided to assist in preparing this report;

A) Plan of Details and Levels, Mepstead & Associates, Ref: 4034, Issue A, 30 January 2024.
B) Staged Development Application Plan of Proposed Subdivision of Lots 3, 4 & 5 in D.P. 124602, Mepstead & Associates, Ref: 4034, Issue B, 31 May 2016.
C) Bushfire Assessment Report, Advanced Bushfire Performance Solutions, Version 1, 13 August 2024.

1.3 The site and tree inspections were carried out on the 4th, 5th, 19th and 20th of March 2024, the 23rd of April 2024, and the 25th of June 2024. The site inspection on the 25th of June 2024 was accompanied by Terrence O'Toole of Advanced Bushfire Performance Solutions, and Elaway Dalby-Ball of Ecological Consultants Australia. Access was available to the subject site and adjoining public areas only. All tree data contained in this report was collected during these site inspections.

2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct a ground level visual assessment of all significant trees located within 10 metres of development works. For the purpose of this report, a significant tree is a tree with a height equal to or greater than 5 metres and a trunk diameter (DBH) equal to or greater than 120mm.

2.1.2 Determine the trees estimated contribution years and remaining useful life expectancy and award the trees a retention value.

2.1.3 Provide an assessment of the potential impact the proposed development is likely to cause to the condition of the subject trees in accordance with AS4970 Protection of trees on development sites (2009).

2.1.4 Recommend trees for removal for Asset protection Zone (APZ) purposes based on information from Advanced Bushfire Performance Solutions.

2.1.5 Specify tree protection measures in accordance with AS4970-2009 for any tree to be retained during the development.

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3. LIMITATIONS

3.1 The observations and recommendations are based on the site inspections identified in section 1 only. The findings of this report are based on the observations and site conditions at the time of inspection.

3.2 All of the observations were carried out from ground level. The accuracy of the assessment of the subject trees structural condition and health is limited to the visibility of the tree at the time of inspection.

3.3 The tree inspection was visual from ground level only. No soil or tissue testing was carried out as part of the tree inspection. None of the surrounding surfaces adjacent to trees were lifted or removed during the tree inspections.

3.4 Root decay can sometimes be present with no visual indication above ground. It is also impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation. Any form of tree failure due to these activities is beyond the scope of this assessment.

3.5 While an assessment of the subject trees estimated useful life expectancy is included in this report, no specific tree risk assessment has been undertaken for any of trees at the site.

3.6 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.7 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with an *spp*.

3.8 Urban Arbor neither guarantees, nor is it responsible for, the accuracy of information provided by others that is contained within this report.

3.9 All diagrams, plans and photographs included in this report are visual aids only and are not to scale unless otherwise indicated.

3.10 Alteration of this report invalidates the entire report.

3.11 One hundred and fifty-three (153) trees included within this report have not been identified on the Plan of Details and Levels by Mepstead & Associates dated 30 January 2024. Therefore, the location of these trees, and the assessment of construction impacts for these trees, has been estimated based on the available information. If an accurate assessment of these trees is required, they must be located by a registered surveyor. See section 5.3 for more information.

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4. METHODOLOGY

4.1 The following information was collected during the assessment of the subject tree(s).

- 4.1.1 Tree common name
- 4.1.2 Tree botanical name
- 4.1.3 Tree age class
- 4.1.4 DBH (Trunk/Stem diameter at breast height/1.4m) - millimetres.
- 4.1.5 DAB (Trunk diameter directly above the root buttress) – millimetres.
- 4.1.6 Estimated height – metres.
- 4.1.7 Estimated crown spread (radius of crown) – metres.
- 4.1.8 Health
- 4.1.9 Structural condition
- 4.1.10 Amenity value
- 4.1.11 Estimated remaining contribution years (SULE)[1]
- 4.1.12 Retention value (Tree AZ)[2]
- 4.1.13 Notes/comments

4.2 An assessment of the trees condition was made using the visual tree assessment (VTA) model (Mattheck & Breloer, 1994).[3]

4.3 Trunk diameter was measured using a DBH tape or in some cases estimated. The trunk diameter of all trees in adjoining sites has been estimated. Tree height and tree canopy spread was measured with a clinometer or in some cases estimated. All other measurements were estimations unless otherwise stated. The other tool used during the assessment was a digital camera.

4.4 All information was imported into (GIS) PT-mapper pro software. This software was used to measure/calculate all encroachment estimates included in this report.

4.5 All DBH measurements, tree protection zones, and structural root zones were calculated in accordance with methods set out in AS4970 Protection of trees on development sites (2009) in a Microsoft Excel spreadsheet.[4]

4.6 Details of how the observations in this report have been assessed are listed in the appendices.

[1] Barrell, J. (2001), *'SULE: Its use and status in the new millennium' in Management of Mature Trees proceedings of the 4th NAAA Workshop*, Sydney, 2001. Barrell.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

[4] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

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5. SITE LOCATION AND BRIEF DESCRIPTION

5.1 The subject site is located in the Northern Beaches Local Government Authority (LGA) area, and all trees at the site are subject to protection by the Pittwater Local Environmental Plan (LEP) 2014[5] and Pittwater 21 Development Control Plan (DCP) 2014[6]. The site is not located inside a Heritage Conservation Area and does not form part of a heritage item/listed as environmental heritage in the LEP heritage maps.[7] The site has been identified as containing 'terrestrial biodiversity' in the Pittwater LEP Biodiversity maps.[8]

5.2 Proposed development works include the subdivision of the site into 62 lots, access roads, and associated works.

5.3 One hundred and fifty-three (153) trees included within this report have not been identified on the Plan of Details and Levels by Mepstead & Associates dated 29 January 2024, including tree 10, 20, 21, 22, 30, 34, 35, 41, 42, 43, 44, 47, 48, 50, 51, 53, 67, 77, 78, 106, 145, 148, 149, 150, 152, 156, 168, 177, 182, 183, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 200, 201, 202, 205, 206, 207, 209, 210, 212, 213, 214, 218, 221, 228, 229, 230, 231, 232, 233, 234, 235, 242, 244, 246, 247, 248, 249, 253, 254, 255, 256, 257, 258, 260, 261, 262, 263, 267, 268, 270, 272, 275, 276, 277, 279, 280, 281, 283, 285, 287, 288, 290, 291, 293, 294, 295, 296, 297, 298, 353, 354, 355, 356, 359, 360, 361, 362, 364, 365, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 387, 388, 389, 390, 391, 392, 393, 394, 396, 397, 398, 399, 400, 401, 406, 408, 409, 459, 460, 470, 475, 476, 479, 480, 489 and 493. Therefore, the location of these trees and the assessment of construction impacts for these trees has been estimated based on the available information. If an accurate assessment of these trees is required, they must be located by a registered surveyor.

5.4 The majority of the trees included within this report were physically marked with plastic tree identification tags during the site inspections in March and April 2024. The tags were placed on Southern (or most accessible) side of the tree at approximately 1.8m above ground height. It was not possible to access the trunks and place identification tags on some trees due to thick vegetation or impassable topography, see the notes column in Appendix 2 Tree Inspection Schedule for further information.

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5 *Pittwater Local Environmental Plan 2014*, https://legislation.nsw.gov.au/view/html/inforce/current/epi-2014-0320, accessed 16 April 2024.

6 *Pittwater 21 Development Control Plan 2014*, https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/planning-controls, accessed 16 April 2024.

7 *Pittwater LEP Heritage map - Sheet HER_012*, https://eplanningdlprod.blob.core.windows.net/pdfmaps/6370_COM_HER_012_010_20151217.pdf, accessed 16 April 2024.

8 *Pittwater LEP Biodiversity map - Sheet BIO_012*, https://eplanningdlprod.blob.core.windows.net/pdfmaps/6370_COM_BIO_012_010_20140217.pdf, accessed 16 April 2024.

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6. GENERAL INFORMATION IN RELATION TO PROTECTING TREES ON DEVELOPMENT SITES

6.1 **Tree protection zone (TPZ):** The TPZ is the principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified in AS4970-2009 to be the area where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The TPZ also incorporates the SRZ (see below for more information about the SRZ). The TPZ is calculated by multiplying the DBH by twelve, with the exception of palms, other monocots, cycads and tree ferns, the TPZ of which have been calculated at one metre outside the crown projection. Additional information about the TPZ is included in Appendix 3.

6.2 **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. The SRZ is calculated using the following formula; $(DAB \times 50)^{0.42} \times 0.64$. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally, work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ. See the appendices for more information about the SRZ.

6.3 **Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

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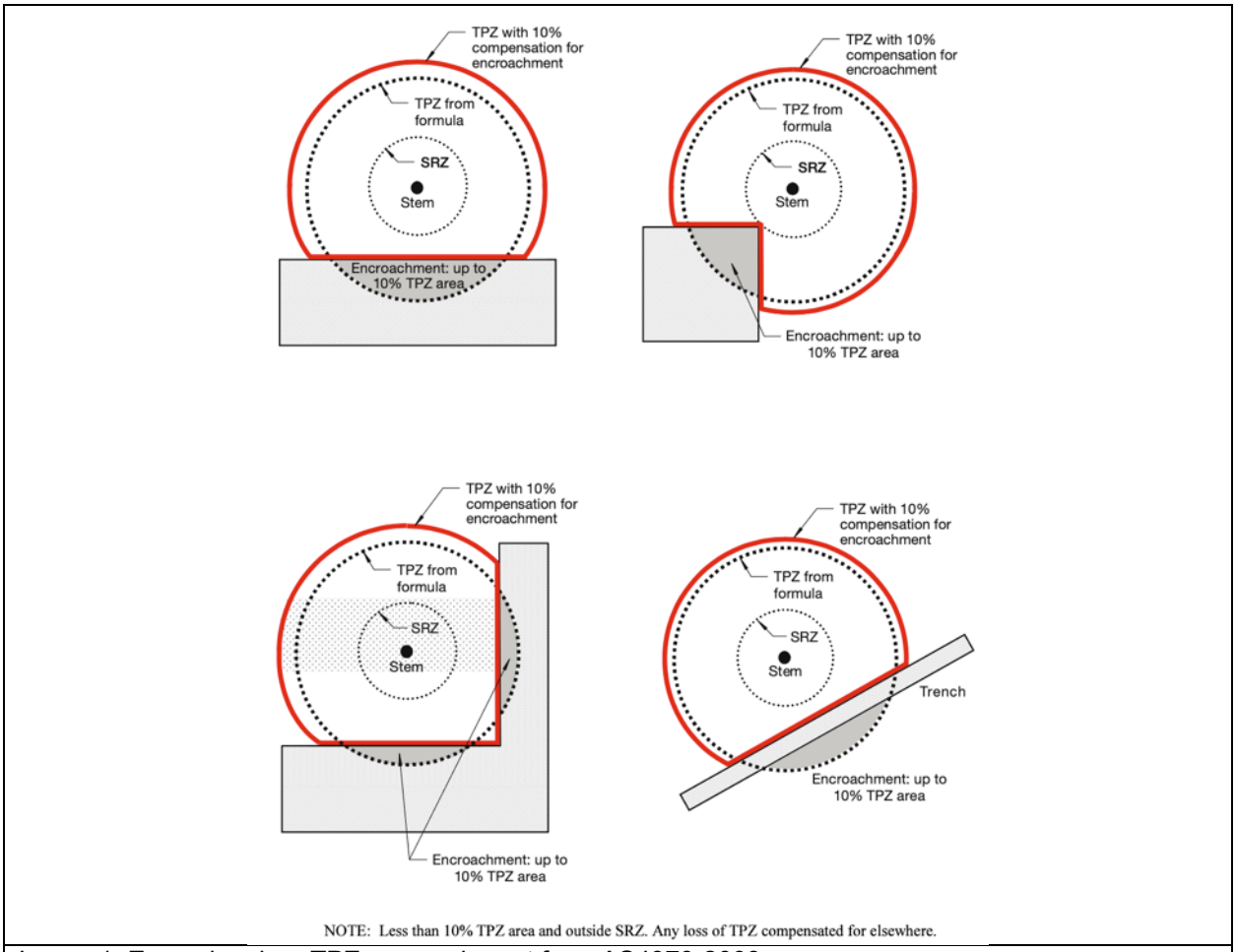

Image 1: Example minor TPZ encroachment from AS4970-2009.

6.4 **Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted. Root investigations may be required to identify roots that will be impacted during major TPZ encroachment (see Appendix 3 for more information in relation to root investigations).

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7. OBSERVATIONS

7.1 **Tree information:** Details of each individual tree assessed, including the observations taken during the site inspection, can be found in the tree inspection schedule in Appendix 2, where the indicative tree protection zone (TPZ) and Structural Root Zone (SRZ) has been calculated for each of the subject trees. The TPZ and SRZ should be measured in radius from the centre of the trunk. Each of the subject trees have been awarded a retention value based on the observations using the Tree AZ method. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The Tree AZ categories sheet (Barrell Tree Consultancy) has been included in Appendix 3 to assist with understanding the retention values. The retention value that has been allocated to the subject trees in this report is not definitive and should only be used as a guideline.

7.2 **Site plan:** In Appendix 1 four site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans. The following site plans are included;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan
- Appendix 1C: Proposed Connection Road Plan
- Appendix 1D: Tree Retention & Removal Plan

8. ASSESSMENT OF CONSTRUCTION IMPACTS

8.1 Table 1: In the table below, the impact of the proposed development has been assessed for all trees included in the report. The assessed TPZ encroachments include proposed access roads and easements only. Proposed civil plans have not been provided for assessment, therefore bulk earthworks (cut and fill), stormwater management and building envelopes have not been assessed within this report. All soft landscaping should be completed in accordance with section 11.9.

Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
1	*Eucalyptus umbra*	A1	6.5	132.7	2.7	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 37% (48.7m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
2	*Angophora costata*	A1	2.9	26.4	1.9	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
3	*Syncarpia glomulifera*	A1	3.2	32.2	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
4	*Eucalyptus botryoides*	Z10	3.0	28.3	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
5	*Angophora costata*	Z1	2.3	16.6	1.7	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
6	*Eucalyptus botryoides*	A1	15.0	706.9	3.8	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 20% (141m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
7	*Corymbia gummifera*	A1	7.9	196.1	2.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
8	*Eucalyptus globoidea*	Z4	4.0	50.3	2.2	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
9	*Angophora costata*	Z5	13.1	539.1	3.6	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
10	*Corymbia gummifera*	A2	4.4	60.8	2.3	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 1% (0.9m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
11	*Angophora floribunda*	Z10	3.6	40.7	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
12	*Angophora costata*	Z9	7.6	181.5	2.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
13	*Eucalyptus botryoides*	A2	6.2	120.8	2.6	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
14	*Syncarpia glomulifera*	A1	5.5	95.0	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
15	*Angophora costata*	A2	3.7	43.0	2.1	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
16	*Corymbia gummifera*	ZZ4	7.8	191.1	2.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2. The tree is dead.	Remove*
17	*Syncarpia glomulifera*	Z1	2.4	18.1	1.9	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
18	*Eucalyptus spp*	A2	9.4	277.6	3.1	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 9% (24.9m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
19	*Angophora costata*	A2	5.3	88.2	2.5	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 5% (4.4m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
20	*Angophora costata*	Z1	2.0	12.6	1.5	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
21	*Syncarpia glomulifera*	Z1	3.4	36.3	2.3	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
22	*Eucalyptus paniculata*	AA1	9.6	289.5	3.2	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
23	*Eucalyptus umbra*	Z4	5.6	98.5	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
24	*Eucalyptus botryoides*	Z4	5.4	91.6	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
25	*Eucalyptus paniculata*	A1	8.2	211.2	3.1	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
26	*Angophora costata*	A1	4.3	58.1	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
27	*Eucalyptus paniculata*	A1	6.7	141.0	2.8	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
28	*Eucalyptus paniculata*	A2	7.3	167.4	2.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
29	*Eucalyptus paniculata*	A1	8.5	227.0	3.0	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
30	*Eucalyptus paniculata*	Z1	2.3	16.6	1.7	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
31	*Syncarpia glomulifera*	Z1	3.7	43.0	2.0	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 4% (1.7m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
32	*Eucalyptus paniculata*	A1	3.0	28.3	2.0	Major	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 24% (6.8m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
33	*Angophora costata*	Z4	9.0	254.5	3.1	Major	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 20% (51.8m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. The tree was displaying poor health during the site inspection with advanced decline. The tree is not suitable for retention long term.	Remove*
34	*Eucalyptus paniculata*	Z1	2.0	12.6	1.5	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
35	*Eucalyptus paniculata*	A1	2.5	19.6	1.9	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
36	*Syncarpia glomulifera*	A1	4.2	55.4	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
37	*Syncarpia glomulifera*	Z4	3.0	28.3	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
38	*Eucalyptus paniculata*	Z10	3.7	43.0	2.2	Major	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 21% (9.1m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
39	*Syncarpia glomulifera*	A2	7.3	167.4	2.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
40	*Eucalyptus paniculata*	Z5	8.0	201.1	2.9	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor structure and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
41	*Glochidion ferdinandi*	Z1	2.9	26.4	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
42	*Olea europaea*	Z3	2.6	21.2	1.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment. Exempt species.	Retain and protect
43	*Olea europaea*	Z3	2.4	18.1	1.7	None	The tree is located within the adjoining site. No proposed TPZ encroachment. Exempt species.	Retain and protect
44	*Macadamia integrifolia*	Z1	3.5	38.5	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
45	*Angophora costata*	A1	5.4	91.6	2.4	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
46	*Banksia integrifolia*	A1	3.7	43.0	2.1	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
47	*Jacaranda mimosifolia*	Z3	3.3	34.2	2.3	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
48	*Banksia integrifolia*	A1	3.7	43.0	2.2	Major	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed right of carriageway will encroach into the TPZ by 30% (12.9m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
49	*Eucalyptus botryoides*	A2	13.0	530.9	3.4	Major	The tree and is located within the adjoining site. The proposed right of carriageway will encroach into the TPZ by 34% (179.7m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
50	*Syncarpia glomulifera*	A1	7.0	153.9	2.7	Major	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed right of carriageway and access road 2 will encroach into the TPZ by 38% (58.1m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
51	*Allocasuarina littoralis*	Z1	3.1	30.2	2.1	Minor	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed access road 2 will encroach into the TPZ by 6% (1.9m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
52	*Eucalyptus paniculata*	A1	2.9	26.4	1.9	Major	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 11% (3m^2) but not into the SRZ. This is just 1% above the threshold for minor TPZ encroachment. The tree was displaying good health during the site inspection, indicating the tree has the capacity to tolerate the root disturbance. Therefore, the tree can be retained in a viable condition.	Retain and protect
53	*Eucalyptus umbra*	A1	4.8	72.4	2.3	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
54	*Syncarpia glomulifera*	Z1	2.0	12.6	1.5	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 8% (1m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
55	*Eucalyptus paniculata*	Z1	2.0	12.6	1.7	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
56	*Glochidion ferdinandi*	Z1	3.0	28.3	2.0	Major	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed access road 2 will encroach into the TPZ by 46% (12.9m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
57	*Eucalyptus botryoides*	A2	10.1	320.5	3.2	Major	The tree is located within the adjoining site. The proposed right of carriageway will encroach into the TPZ by 43% (136.7m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
58	*Eucalyptus paniculata*	A1	2.8	24.6	1.9	Major	The tree is located within the adjoining site. The proposed right of carriageway will encroach into the TPZ by 15% (3.8m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
59	*Glochidion ferdinandi*	Z1	2.0	12.6	1.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
60	*Glochidion ferdinandi*	Z1	2.0	12.6	1.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road 2.	Remove*
61	*Glochidion ferdinandi*	Z1	2.0	12.6	1.5	Major	The tree is located within the adjoining site. The proposed right of carriageway will encroach into the TPZ by 29% (3.7m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
62	*Syncarpia glomulifera*	A1	5.9	109.4	2.6	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by less than 1% (0.3m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
63	*Eucalyptus botryoides*	Z4	8.4	221.7	3.0	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 6% (13.1m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
64	*Eucalyptus spp*	ZZ4	5.4	91.6	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment. The tree is dead.	Retain and protect
65	*Eucalyptus spp*	Z4	5.2	84.9	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
66	*Eucalyptus botryoides*	A2	6.6	136.8	2.7	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 9% (12.3m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
67	*Syncarpia glomulifera*	A1	4.8	72.4	2.4	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
68	*Syncarpia glomulifera*	A1	4.3	58.1	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
69	*Eucalyptus umbra*	Z4	4.8	72.4	2.3	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 5% (3.6m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
70	*Syncarpia glomulifera*	A1	4.2	55.4	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
71	*Syncarpia glomulifera*	A1	5.3	88.2	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
72	*Eucalyptus paniculata*	A2	4.3	58.1	2.2	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
73	*Syncarpia glomulifera*	A1	6.2	120.8	2.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
74	*Eucalyptus botryoides*	A2	4.8	72.4	2.4	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
75	*Syncarpia glomulifera*	A1	6.6	136.8	2.7	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
76	*Eucalyptus crebra*	A1	7.4	172.0	2.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
77	*Acacia longifolia*	Z4	2.2	15.2	1.8	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
78	*Acacia longifolia*	Z1	2.0	12.6	1.6	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
79	*Angophora costata*	A2	7.3	167.4	2.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
80	*Syncarpia glomulifera*	A1	7.6	181.5	2.8	None	No proposed TPZ encroachment.	Retain and protect
81	*Syncarpia glomulifera*	A1	6.0	113.1	2.6	None	No proposed TPZ encroachment.	Retain and protect
82	*Syncarpia glomulifera*	A1	4.3	58.1	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
83	*Syncarpia glomulifera*	A1	5.0	78.5	2.3	None	No proposed TPZ encroachment.	Retain and protect
84	*Eucalyptus umbra*	A1	7.0	153.9	2.8	None	No proposed TPZ encroachment.	Retain and protect
85	*Syncarpia glomulifera*	A1	2.9	26.4	1.8	None	No proposed TPZ encroachment.	Retain and protect
86	*Syncarpia glomulifera*	A1	4.9	75.4	2.4	None	No proposed TPZ encroachment.	Retain and protect
87	*Syncarpia glomulifera*	A1	3.1	30.2	2.1	None	No proposed TPZ encroachment.	Retain and protect
88	*Syncarpia glomulifera*	A1	4.3	58.1	2.2	None	No proposed TPZ encroachment.	Retain and protect
89	*Syncarpia glomulifera*	A1	4.1	52.8	2.2	None	No proposed TPZ encroachment.	Retain and protect
90	*Syncarpia glomulifera*	A1	3.8	45.4	2.3	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
91	*Syncarpia glomulifera*	A1	4.7	69.4	2.3	None	No proposed TPZ encroachment.	Retain and protect
92	*Syncarpia glomulifera*	A1	4.6	66.5	2.3	None	No proposed TPZ encroachment.	Retain and protect
93	*Syncarpia glomulifera*	A1	5.2	84.9	2.5	None	No proposed TPZ encroachment.	Retain and protect
94	*Angophora costata*	A2	4.8	72.4	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
95	*Eucalyptus paniculata*	ZZ4	9.6	289.5	3.2	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
96	*Syncarpia glomulifera*	A1	4.7	69.4	2.3	None	No proposed TPZ encroachment.	Retain and protect
97	*Eucalyptus paniculata*	A1	4.7	69.4	2.4	None	No proposed TPZ encroachment.	Retain and protect
98	*Eucalyptus paniculata*	A1	10.2	326.9	3.3	Minor	The proposed access road 2 will encroach into the TPZ by 8% (25.4m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
99	*Eucalyptus paniculata*	AA1	9.5	283.5	3.2	Footprint	The trunk of the tree is located within the footprint of the proposed access road 2.	Remove
100	*Syncarpia glomulifera*	Z10	3.6	40.7	2.1	Footprint	The trunk of the tree is located within the footprint of the proposed access road 2.	Remove
101	*Syncarpia glomulifera*	Z10	3.4	36.3	2.1	Footprint	The trunk of the tree is located within the footprint of the proposed access road 2.	Remove
102	*Eucalyptus umbra*	A2	5.9	109.4	2.6	Footprint	The trunk of the tree is located within the footprint of the proposed access road 2.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
103	*Eucalyptus umbra*	A2	11.8	437.4	3.5	Major	The proposed access road 4 will encroach into the TPZ by 11% (49.2m^2) but not into the SRZ. This is just 1% above the threshold for minor TPZ encroachment. The tree was displaying fair health during the site inspection, indicating the tree still has the capacity to tolerate the root disturbance. Therefore, the tree can be retained in a viable condition.	Retain and protect
104	*Eucalyptus paniculata*	A2	5.2	84.9	2.4	None	No proposed TPZ encroachment.	Retain and protect
105	*Eucalyptus umbra*	Z5	7.1	158.4	2.8	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor structure and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
106	*Syncarpia glomulifera*	A1	4.0	50.3	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
107	*Eucalyptus paniculata*	A1	8.5	227.0	3.1	None	No proposed TPZ encroachment.	Retain and protect
108	*Eucalyptus umbra*	Z4	7.2	162.9	2.8	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
109	*Eucalyptus paniculata*	A2	9.0	254.5	3.1	None	No proposed TPZ encroachment.	Retain and protect
110	*Eucalyptus umbra*	Z4	7.1	158.4	2.7	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
111	*Eucalyptus paniculata*	Z5	6.7	141.0	2.7	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor structure and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
112	*Eucalyptus spp*	Z4	7.7	186.3	2.9	None	No proposed TPZ encroachment. During the site inspection the health of the tree was in decline and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
113	*Eucalyptus umbra*	Z5	7.8	191.1	2.9	None	No proposed TPZ encroachment. During the site inspection the tree was displaying poor structure and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
114	*Eucalyptus spp*	ZZ4	8.4	221.7	3.0	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
115	*Eucalyptus umbra*	A2	9.0	254.5	3.1	None	No proposed TPZ encroachment.	Retain and protect
116	*Eucalyptus paniculata*	A1	9.7	295.6	3.2	None	No proposed TPZ encroachment.	Retain and protect
117	*Eucalyptus paniculata*	AA1	12.0	452.4	3.5	Footprint	The trunk of the tree is located within the footprint of the proposed access road 4.	Remove
118	*Livistona australis*	A1	2.5	19.6	NA	None	No proposed TPZ encroachment.	Retain and protect
119	*Eucalyptus paniculata*	A2	7.4	172.0	2.8	None	No proposed TPZ encroachment.	Retain and protect
120	*Eucalyptus paniculata*	A1	8.5	227.0	2.9	None	No proposed TPZ encroachment.	Retain and protect
121	*Eucalyptus eugenioides*	Z4	13.7	589.6	3.6	Footprint	The trunk of the tree is located within the footprint of the proposed access road 4.	Remove
122	*Syncarpia glomulifera*	A1	6.6	136.8	2.6	None	No proposed TPZ encroachment.	Retain and protect
123	*Eucalyptus paniculata*	A1	7.4	172.0	2.8	None	No proposed TPZ encroachment.	Retain and protect
124	*Syncarpia glomulifera*	A1	5.9	109.4	2.5	None	No proposed TPZ encroachment.	Retain and protect
125	*Eucalyptus paniculata*	A1	5.5	95.0	2.5	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
126	*Eucalyptus spp*	A1	7.7	186.3	2.8	None	No proposed TPZ encroachment.	Retain and protect
127	*Angophora costata*	Z10	4.6	66.5	2.3	None	No proposed TPZ encroachment.	Retain and protect
128	*Angophora costata*	A1	7.0	153.9	2.7	None	No proposed TPZ encroachment.	Retain and protect
129	*Eucalyptus paniculata*	A1	8.3	216.4	2.9	None	No proposed TPZ encroachment.	Retain and protect
130	*Eucalyptus paniculata*	A1	7.4	172.0	2.8	None	No proposed TPZ encroachment.	Retain and protect
131	*Eucalyptus paniculata*	A1	8.0	201.1	2.9	None	No proposed TPZ encroachment.	Retain and protect
132	*Eucalyptus spp*	ZZ4	4.2	55.4	2.3	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
133	*Eucalyptus spp*	A1	10.0	314.2	3.2	None	No proposed TPZ encroachment.	Retain and protect
134	*Angophora costata*	A2	7.8	191.1	2.9	None	No proposed TPZ encroachment.	Retain and protect
135	*Angophora costata*	A1	5.0	78.5	2.4	None	No proposed TPZ encroachment.	Retain and protect
136	*Angophora costata*	A2	8.0	201.1	2.9	None	No proposed TPZ encroachment.	Retain and protect
137	*Eucalyptus paniculata*	A1	8.0	201.1	2.9	None	No proposed TPZ encroachment.	Retain and protect
138	*Syncarpia glomulifera*	A2	11.8	437.4	3.4	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
139	*Eucalyptus spp*	A4	8.4	221.7	3.0	None	No proposed TPZ encroachment.	Retain and protect
140	*Eucalyptus paniculata*	AA1	9.7	295.6	3.1	None	No proposed TPZ encroachment.	Retain and protect
141	*Angophora costata*	A4	12.6	498.8	3.4	Minor	The proposed easement will encroach into the TPZ by 2% (12.3m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
142	*Eucalyptus umbra*	Z10	9.0	254.5	3.1	None	No proposed TPZ encroachment.	Retain and protect
143	*Eucalyptus umbra*	Z4	9.7	295.6	3.2	Major	The proposed easement and right of access will encroach into the TPZ by 41% (120m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. During the site inspection the health of the tree was in decline and the tree is not suitable for retention long term. The tree is recommended for removal due to development impacts and due to the condition of the tree.	Remove
144	*Syncarpia glomulifera*	A1	8.9	248.8	3.0	Major	The proposed easement and right of access will encroach into the TPZ by 22% (53.6m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
145	*Eucalyptus umbra*	A2	8.3	216.4	2.9	Major	The tree has not been identified on the received plans. Based on the estimated location of the tree, the proposed right of access will encroach into the TPZ by 11% (24m^2) but not into the SRZ. This is just 1% above the threshold for minor TPZ encroachment. The tree was displaying fair health during the site inspection, indicating the tree still has the capacity to tolerate the root disturbance. Therefore, the tree can be retained in a viable condition.	Retain and protect
146	*Angophora costata*	A2	7.6	181.5	2.8	Footprint	The trunk of the tree is located within the footprint of the proposed right of access.	Remove
147	*Eucalyptus spp*	Z10	8.4	221.7	2.9	Footprint	The trunk of the tree is located within the footprint of the proposed right of access.	Remove
148	*Eucalyptus spp*	Z4	7.2	162.9	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
149	*Livistona australis*	A1	2.5	19.6	NA	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
150	*Livistona australis*	A1	2.5	19.6	NA	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
151	*Angophora costata*	Z1	5.4	91.6	2.4	Major	The proposed right of access will encroach into the TPZ by 11% (24m^2) but not into the SRZ. This is just 1% above the threshold for minor TPZ encroachment. The tree was displaying fair health during the site inspection, indicating the tree still has the capacity to tolerate the root disturbance. Therefore, the tree can be retained in a viable condition.	Retain and protect
152	*Eucalyptus spp*	Z4	7.0	153.9	2.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
153	*Syncarpia glomulifera*	A1	4.6	66.5	2.4	None	No proposed TPZ encroachment.	Retain and protect
154	*Eucalyptus paniculata*	A1	8.4	221.7	3.0	None	No proposed TPZ encroachment.	Retain and protect
155	*Eucalyptus spp*	A1	14.4	651.4	3.6	None	No proposed TPZ encroachment.	Retain and protect
156	*Syncarpia glomulifera*	A1	6.2	120.8	2.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
157	*Livistona australis*	A2	2.5	19.6	NA	Footprint	The trunk of the tree is located within the footprint of the proposed access road 4.	Remove
158	*Livistona australis*	A1	2.5	19.6	NA	None	No proposed TPZ encroachment.	Retain and protect
159	*Syncarpia glomulifera*	Z10	3.6	40.7	2.1	None	No proposed TPZ encroachment.	Retain and protect
160	*Syncarpia glomulifera*	Z10	3.0	28.3	1.9	None	No proposed TPZ encroachment.	Retain and protect
161	*Livistona australis*	A1	2.5	19.6	NA	None	No proposed TPZ encroachment.	Retain and protect
162	*Syncarpia glomulifera*	A1	6.2	120.8	2.7	None	No proposed TPZ encroachment.	Retain and protect
163	*Eucalyptus umbra*	A4	10.8	366.4	3.4	None	No proposed TPZ encroachment.	Retain and protect
164	*Olea europaea*	Z3	7.2	162.9	2.7	None	No proposed TPZ encroachment. Exempt species.	Retain and protect
165	*Olea europaea*	Z3	4.2	55.4	2.4	None	No proposed TPZ encroachment. Exempt species.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
166	*Eucalyptus umbra*	Z4	9.6	289.5	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
167	*Eucalyptus umbra*	Z4	6.0	113.1	2.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
168	*Allocasuarina littoralis*	A1	7.0	153.9	2.8	Major	The tree has not been identified on the survey. Based on the estimated location of the tree, the proposed easement will encroach into the TPZ by 15% (23.8m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts.	Remove
169	*Cinnamomum camphora*	Z3	6.0	113.1	2.6	Footprint	The trunk of the tree is located within the footprint of the proposed access road 3. Exempt species.	Remove
170	*Syncarpia glomulifera*	Z10	5.5	95.0	2.4	Major	The proposed access road 3 will encroach into the TPZ by 38% (36.3m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts.	Remove
171	*Cinnamomum camphora*	Z3	7.2	162.9	2.7	Major	The proposed access road 3 will encroach into the TPZ by 24% (39.9m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. Exempt species.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
172	*Eucalyptus spp*	Z4	7.2	162.9	2.8	Major	The proposed right of access and easement will encroach into the TPZ by 19% (30.5m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to development impacts and due to the condition of the tree.	Remove
173	*Populus nigra 'Italica'*	Z3	5.6	98.5	2.5	Footprint	The trunk of the tree is located within the footprint of the proposed right of access. Exempt species.	Remove
174	*Populus nigra 'Italica'*	Z3	6.2	120.8	2.7	Footprint	The trunk of the tree is located within the footprint of the proposed right of access. Exempt species.	Remove
175	*Glochidion ferdinandi*	Z1	4.3	58.1	2.3	Major	The proposed right of access and easement will encroach into the TPZ by 23% (13.1m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts.	Remove
176	*Ficus elastica*	Z3	6.8	145.3	2.7	Minor	The proposed right of access and easement will encroach into the TPZ by 4% (5.8m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree. Exempt species.	Retain and protect
177	*Banksia integrifolia*	A1	5.0	78.5	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
178	*Syncarpia glomulifera*	A1	6.5	132.7	2.7	None	No proposed TPZ encroachment.	Retain and protect
179	*Eucalyptus resinifera*	Z10	8.5	227.0	3.0	None	No proposed TPZ encroachment.	Retain and protect
180	*Celtis spp*	Z3	3.7	43.0	2.3	None	No proposed TPZ encroachment. Exempt species.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
181	*Celtis spp*	Z3	2.4	18.1	1.8	None	No proposed TPZ encroachment. Exempt species.	Retain and protect
182	*Celtis spp*	Z3	2.4	18.1	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
183	*Olea europaea*	Z3	2.3	16.6	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
184	*Banksia serrata*	A1	5.9	109.4	2.6	None	No proposed TPZ encroachment.	Retain and protect
185	*Syncarpia glomulifera*	A1	8.2	211.2	2.9	None	No proposed TPZ encroachment.	Retain and protect
186	*Angophora costata*	AA1	8.6	232.4	3.1	None	No proposed TPZ encroachment.	Retain and protect
187	*Livistona australis*	A1	2.5	19.6	NA	None	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
188	*Carya illinoinensis*	A1	4.8	72.4	2.3	Major	The proposed right of access and easement will encroach into the TPZ by 42% (30.4m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts.	Remove
189	*Pyrus calleryana*	Z1	4.0	50.3	2.6	Footprint	The tree has not been identified on the survey. Based on the estimated location of the tree, the trunk of the tree is located within the footprint of the proposed right of access.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
190	*Macadamia integrifolia*	A1	4.8	72.4	2.3	Major	The tree has not been identified on the survey. Based on the estimated location of the tree, the proposed right of access and easement will encroach into the TPZ by 14% (10m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts.	Remove
191	*Ceratonia siliqua*	Z10	5.9	109.4	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
192	*Glochidion ferdinandi*	Z1	2.3	16.6	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
193	*Syncarpia glomulifera*	A1	3.7	43.0	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
194	*Morus rubra*	Z3	2.8	24.6	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
195	*Morus nigra*	Z3	4.0	50.3	3.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
196	*Carya illinoinensis*	A1	8.2	211.2	2.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
197	*Olea europaea*	Z3	4.4	60.8	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. Exempt species.	Retain and protect
198	*Eucalyptus umbra*	Z9	11.0	380.1	3.4	None	No proposed TPZ encroachment.	Retain and protect
199	*Angophora costata*	AA1	10.1	320.5	3.4	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
200	*Allocasuarina torulosa*	ZZ4	5.0	78.5	2.4	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
201	*Allocasuarina littoralis*	A1	2.4	18.1	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
202	*Allocasuarina littoralis*	A1	4.2	55.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
203	*Syncarpia glomulifera*	A1	8.4	221.7	3.0	None	No proposed TPZ encroachment.	Retain and protect
204	*Eucalyptus resinifera*	A2	9.0	254.5	3.2	None	No proposed TPZ encroachment.	Retain and protect
205	*Elaeocarpus reticulatus*	A1	2.2	15.2	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
206	*Elaeocarpus reticulatus*	A1	2.0	12.6	1.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
207	*Allocasuarina torulosa*	A1	2.9	26.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
208	*Angophora costata*	A1	4.4	60.8	2.3	None	No proposed TPZ encroachment.	Retain and protect
209	*Syncarpia glomulifera*	A1	4.0	50.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
210	*Allocasuarina littoralis*	A1	3.8	45.4	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
211	*Angophora costata*	A2	6.1	116.9	2.6	None	No proposed TPZ encroachment.	Retain and protect
212	*Allocasuarina littoralis*	Z9	4.4	60.8	2.4	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
213	*Allocasuarina littoralis*	A1	2.6	21.2	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
214	*Eucalyptus umbra*	Z4	4.7	69.4	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
215	*Eucalyptus umbra*	AA4	11.6	422.7	3.4	None	No proposed TPZ encroachment.	Retain and protect
216	*Allocasuarina torulosa*	AA1	5.4	91.6	2.8	None	No proposed TPZ encroachment.	Retain and protect
217	*Allocasuarina torulosa*	AA1	6.5	132.7	2.8	None	No proposed TPZ encroachment.	Retain and protect
218	*Syncarpia glomulifera*	Z1	2.0	12.6	1.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
219	*Allocasuarina torulosa*	A1	3.6	40.7	2.2	None	No proposed TPZ encroachment.	Retain and protect
220	*Syncarpia glomulifera*	A1	6.6	136.8	3.0	None	No proposed TPZ encroachment.	Retain and protect
221	*Eucalyptus spp*	A1	3.1	30.2	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
222	*Syncarpia glomulifera*	A1	6.0	113.1	2.8	None	No proposed TPZ encroachment.	Retain and protect
223	*Syncarpia glomulifera*	A1	4.6	66.5	2.4	None	No proposed TPZ encroachment.	Retain and protect
224	*Syncarpia glomulifera*	A1	7.1	158.4	3.0	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
225	*Eucalyptus spp*	ZZ4	6.6	136.8	2.8	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
226	*Allocasuarina torulosa*	A2	4.0	50.3	2.3	None	No proposed TPZ encroachment.	Retain and protect
227	*Angophora costata*	Z4	7.8	191.1	2.9	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
228	*Carya illinoinensis*	Z1	2.0	12.6	1.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
229	*Allocasuarina torulosa*	A1	5.2	84.9	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
230	*Syncarpia glomulifera*	A1	6.9	149.6	3.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
231	*Eucalyptus botryoides*	A1	4.9	75.4	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
232	*Eucalyptus resinifera*	Z4	7.7	186.3	2.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
233	*Allocasuarina torulosa*	A1	4.2	55.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
234	*Eucalyptus botryoides*	A2	5.6	98.5	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
235	*Eucalyptus resinifera*	A1	7.6	181.5	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
236	*Eucalyptus resinifera*	Z4	5.2	84.9	2.5	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
237	*Eucalyptus resinifera*	A2	3.8	45.4	2.2	None	No proposed TPZ encroachment.	Retain and protect
238	*Allocasuarina torulosa*	A2	4.7	69.4	2.4	None	No proposed TPZ encroachment.	Retain and protect
239	*Syncarpia glomulifera*	Z9	2.8	24.6	2.2	None	No proposed TPZ encroachment.	Retain and protect
240	*Allocasuarina littoralis*	Z6	4.1	52.8	2.3	None	No proposed TPZ encroachment.	Retain and protect
241	*Eucalyptus botryoides*	A2	7.9	196.1	2.9	None	No proposed TPZ encroachment.	Retain and protect
242	*Angophora costata*	A1	3.2	32.2	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
243	*Livistona australis*	A1	3.0	28.3	NA	None	No proposed TPZ encroachment.	Retain and protect
244	*Eucalyptus botryoides*	A1	8.4	221.7	2.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
245	*Eucalyptus resinifera*	A1	3.5	38.5	2.1	None	No proposed TPZ encroachment.	Retain and protect
246	*Elaeocarpus reticulatus*	A1	3.0	28.3	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
247	*Eucalyptus spp*	A1	7.3	167.4	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
248	*Syncarpia glomulifera*	A1	6.8	145.3	2.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
249	*Elaeocarpus reticulatus*	Z1	2.2	15.2	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
250	*Angophora costata*	A2	6.1	116.9	2.7	None	No proposed TPZ encroachment.	Retain and protect
251	*Angophora costata*	A2	3.1	30.2	2.0	None	No proposed TPZ encroachment.	Retain and protect
252	*Allocasuarina torulosa*	A1	3.2	32.2	2.0	None	No proposed TPZ encroachment. The tree has been identified for removal for APZ purposes by Advanced Bushfire Performance Solutions.	Remove APZ
253	*Angophora costata*	A1	2.9	26.4	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
254	*Angophora costata*	A1	2.9	26.4	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
255	*Allocasuarina torulosa*	A1	3.1	30.2	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
256	*Allocasuarina torulosa*	A1	4.3	58.1	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
257	*Allocasuarina torulosa*	A1	4.3	58.1	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. The tree has been identified for removal for APZ purposes by Advanced Bushfire Performance Solutions.	Remove APZ
258	*Eucalyptus resinifera*	A1	3.1	30.2	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
259	*Eucalyptus resinifera*	A1	7.2	162.9	2.7	None	No proposed TPZ encroachment.	Retain and protect
260	*Allocasuarina torulosa*	Z1	2.2	15.2	1.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. The tree has been identified for removal for APZ purposes by Advanced Bushfire Performance Solutions.	Remove APZ

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
261	*Unknown species*	A1	3.7	43.0	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
262	*Allocasuarina torulosa*	A4	6.5	132.7	2.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
263	*Eucalyptus spp*	Z4	6.1	116.9	2.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment. During the site inspection the tree was displaying poor health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
264	*Angophora costata*	A2	9.5	283.5	3.1	None	No proposed TPZ encroachment.	Retain and protect
265	*Allocasuarina torulosa*	A1	4.7	69.4	2.3	None	No proposed TPZ encroachment.	Retain and protect
266	*Angophora costata*	A1	4.3	58.1	2.3	None	No proposed TPZ encroachment.	Retain and protect
267	*Allocasuarina torulosa*	Z9	3.7	43.0	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
268	*Syncarpia glomulifera*	A1	4.3	58.1	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
269	*Allocasuarina torulosa*	AA1	8.4	221.7	3.2	None	No proposed TPZ encroachment.	Retain and protect
270	*Allocasuarina torulosa*	A1	6.8	145.3	2.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
271	*Allocasuarina torulosa*	AA1	6.0	113.1	2.6	None	No proposed TPZ encroachment.	Retain and protect
272	*Unknown species*	A1	4.0	50.3	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
273	*Allocasuarina torulosa*	AA1	5.9	109.4	2.6	None	No proposed TPZ encroachment.	Retain and protect
274	*Allocasuarina torulosa*	A2	7.3	167.4	2.8	None	No proposed TPZ encroachment.	Retain and protect
275	*Syncarpia glomulifera*	A1	5.9	109.4	2.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
276	*Eucalyptus botryoides*	A1	4.2	55.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
277	*Allocasuarina torulosa*	A1	3.6	40.7	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
278	*Angophora costata*	A1	5.4	91.6	2.6	None	No proposed TPZ encroachment.	Retain and protect
279	*Allocasuarina torulosa*	A1	3.6	40.7	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
280	*Allocasuarina torulosa*	A1	2.4	18.1	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
281	*Eucalyptus punctata*	Z4	4.3	58.1	2.3	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
282	*Syncarpia glomulifera*	A1	6.7	141.0	2.8	None	No proposed TPZ encroachment.	Retain and protect
283	*Syncarpia glomulifera*	A1	4.3	58.1	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
284	*Allocasuarina torulosa*	AA1	7.2	162.9	2.9	None	No proposed TPZ encroachment.	Retain and protect
285	*Allocasuarina torulosa*	AA1	8.5	227.0	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
286	*Angophora costata*	A1	4.0	50.3	2.2	None	No proposed TPZ encroachment.	Retain and protect
287	*Allocasuarina torulosa*	A1	3.8	45.4	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
288	*Syncarpia glomulifera*	A1	3.1	30.2	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
289	*Angophora costata*	AA1	7.2	162.9	2.9	None	No proposed TPZ encroachment.	Retain and protect
290	*Allocasuarina torulosa*	A1	4.6	66.5	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
291	*Allocasuarina torulosa*	A1	2.9	26.4	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
292	*Angophora costata*	AA1	10.0	314.2	3.2	None	No proposed TPZ encroachment.	Retain and protect
293	*Syncarpia glomulifera*	A1	3.5	38.5	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
294	*Allocasuarina torulosa*	A1	4.0	50.3	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
295	*Allocasuarina torulosa*	Z9	4.6	66.5	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
296	*Eucalyptus botryoides*	A1	2.6	21.2	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
297	*Eucalyptus punctata*	A1	4.6	66.5	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
298	*Angophora costata*	A1	3.4	36.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
351	*Allocasuarina torulosa*	A1	5.2	84.9	2.4	None	No proposed TPZ encroachment.	Retain and protect
352	*Eucalyptus botryoides*	AA1	9.2	265.9	3.1	None	No proposed TPZ encroachment.	Retain and protect
353	*Allocasuarina torulosa*	A1	3.5	38.5	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
354	*Allocasuarina torulosa*	A1	4.6	66.5	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
355	*Allocasuarina torulosa*	A1	2.6	21.2	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
356	*Allocasuarina torulosa*	A1	4.0	50.3	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
357	*Angophora costata*	AA1	10.2	326.9	3.2	None	No proposed TPZ encroachment.	Retain and protect
358	*Allocasuarina torulosa*	A1	3.1	30.2	2.0	None	No proposed TPZ encroachment.	Retain and protect
359	*Eucalyptus resinifera*	AA1	7.1	158.4	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
360	*Angophora costata*	A1	4.7	69.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
361	*Allocasuarina torulosa*	A1	4.9	75.4	2.4	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
362	*Livistona australis*	A1	3.0	28.3	NA	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
363	*Allocasuarina torulosa*	A1	4.1	52.8	2.2	None	No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
364	*Allocasuarina torulosa*	A2	4.8	72.4	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
365	*Allocasuarina torulosa*	A2	4.1	52.8	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
366	*Eucalyptus resinifera*	AA1	8.3	216.4	2.9	None	No proposed TPZ encroachment.	Retain and protect
367	*Angophora costata*	A4	11.2	394.1	3.6	None	No proposed TPZ encroachment.	Retain and protect
368	*Allocasuarina torulosa*	A2	2.9	26.4	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
369	*Syncarpia glomulifera*	A1	5.9	109.4	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
370	*Allocasuarina torulosa*	A1	4.9	75.4	2.4	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
371	*Eucalyptus resinifera*	A1	8.3	216.4	2.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
372	*Livistona australis*	A1	3.0	28.3	NA	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
373	*Allocasuarina torulosa*	Z10	4.0	50.3	2.2	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
374	*Eucalyptus resinifera*	A2	5.8	105.7	2.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
375	*Syncarpia glomulifera*	A2	4.0	50.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
376	*Allocasuarina torulosa*	A2	3.4	36.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
377	*Allocasuarina torulosa*	Z10	3.6	40.7	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
378	*Allocasuarina torulosa*	A1	3.4	36.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
379	*Allocasuarina torulosa*	A1	3.2	32.2	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
380	*Allocasuarina torulosa*	A1	4.8	72.4	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
381	*Allocasuarina torulosa*	A2	3.0	28.3	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
382	*Allocasuarina torulosa*	Z4	3.6	40.7	2.1	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
383	*Allocasuarina torulosa*	A1	4.3	58.1	2.3	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
384	*Allocasuarina torulosa*	A1	4.9	75.4	2.4	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
385	*Eucalyptus botryoides*	A1	4.3	58.1	2.2	None	No proposed TPZ encroachment.	Retain and protect
386	*Syncarpia glomulifera*	A2	5.3	88.2	2.7	None	No proposed TPZ encroachment.	Retain and protect
387	*Eucalyptus resinifera*	A2	8.4	221.7	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
388	*Allocasuarina torulosa*	A2	5.0	78.5	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
389	*Angophora costata*	AA4	15.0	706.9	3.7	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
390	*Syncarpia glomulifera*	Z10	5.2	84.9	2.4	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
391	*Syncarpia glomulifera*	A1	6.0	113.1	2.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
392	*Eucalyptus umbra*	A2	9.6	289.5	3.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
393	*Eucalyptus umbra*	A2	12.6	498.8	3.6	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
394	*Eucalyptus botryoides*	Z10	3.1	30.2	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
395	*Allocasuarina torulosa*	A2	3.6	40.7	2.2	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
396	*Allocasuarina torulosa*	A1	3.4	36.3	2.0	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
397	*Angophora costata*	A1	5.4	91.6	2.5	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
398	*Allocasuarina torulosa*	Z10	2.8	24.6	1.9	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
399	*Allocasuarina torulosa*	A1	2.4	18.1	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
400	*Allocasuarina torulosa*	A1	3.0	28.3	2.1	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
401	*Allocasuarina torulosa*	A1	2.5	19.6	1.8	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
402	*Angophora costata*	Z4	7.1	158.4	2.8	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
403	*Angophora costata*	Z4	5.4	91.6	2.5	None	No proposed TPZ encroachment. During the site inspection the tree was displaying declining health and the tree is not suitable for retention long term. The tree is recommended for removal due to its condition only.	Remove
404	*Angophora costata*	A1	6.7	141.0	2.7	None	No proposed TPZ encroachment.	Retain and protect
405	*Eucalyptus spp*	ZZ4	6.8	145.3	2.7	None	No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its condition only.	Remove
406	*Livistona australis*	A1	2.5	19.6	NA	None	The tree has not been identified on the survey. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
407	*Livistona australis*	A1	3.0	28.3	NA	None	No proposed TPZ encroachment.	Retain and protect
408	*Glochidion ferdinandi*	A1	3.7	43.0	2.1	Footprint	The tree has not been identified on the survey. Based on the estimated location of the tree, the trunk of the tree is located within the footprint of the proposed access road 3.	Remove
409	*Glochidion ferdinandi*	A1	5.2	84.9	2.7	Footprint	The tree has not been identified on the survey. Based on the estimated location of the tree, the trunk of the tree is located within the footprint of the proposed access road 3.	Remove
410	*Eucalyptus botryoides*	A1	6.1	116.9	2.6	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
411	*Angophora costata*	A1	6.6	136.8	2.7	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
412	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
413	*Syncarpia glomulifera*	Z10	2.5	19.6	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
414	*Eucalyptus spp*	Z10	4.9	75.4	2.4	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 28% (21.4m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
415	*Eucalyptus spp*	ZZ4	2.6	21.2	1.9	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 28% (21.4m^2) and into the SRZ. This is considered to be a major TPZ encroachment. The tree is dead. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
416	*Eucalyptus umbra*	A1	5.3	88.2	2.5	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 8% (6.9m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
417	*Eucalyptus botryoides*	A1	4.4	60.8	2.4	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by less than 1% (0.5m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
418	*Eucalyptus botryoides*	A1	4.9	75.4	2.4	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
419	*Eucalyptus spp*	A1	5.6	98.5	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
420	*Livistona australis*	A1	2.5	19.6	NA	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
421	*Livistona australis*	A1	2.5	19.6	NA	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 2% (0.3m^2). This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
422	*Livistona australis*	A1	2.5	19.6	NA	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
423	*Angophora floribunda*	A2	2.8	24.6	1.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
424	*Eucalyptus spp*	Z4	5.6	98.5	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
425	*Angophora floribunda*	A1	5.4	91.6	2.4	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 42% (38.3m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
426	*Eucalyptus botryoides*	A1	7.1	158.4	2.8	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 32% (49.9m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
427	*Angophora floribunda*	A2	5.0	78.5	2.4	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
428	*Eucalyptus spp*	ZZ4	3.8	45.4	2.2	Minor	The tree is located within the adjoining site. The proposed access road 2 will encroach into the TPZ by 7% (3.1m^2) but not into the SRZ. This is considered to be a minor TPZ encroachment. The tree is dead and will not be impacted by the proposed works.	Retain and protect
429	*Eucalyptus botryoides*	A4	10.3	333.3	3.2	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 30% (99.8m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
430	*Angophora floribunda*	Z10	3.7	43.0	2.1	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 12% (5m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
431	*Angophora floribunda*	A1	4.0	50.3	2.2	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 13% (6.7m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
							be possible to retain the tree via tree sensitive design and construction of the proposed road.	
432	*Eucalyptus botryoides*	A1	7.3	167.4	2.8	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 46% (76.3m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
433	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
434	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
435	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
436	*Allocasuarina torulosa*	Z5	3.1	30.2	2.0	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 18% (5.3m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. The tree was displaying poor structure during the site inspection, with the presence of an active split at the main stem union. Regardless of the development impact, the tree may not be suitable for retention long term.	Remove*
437	*Angophora floribunda*	Z10	2.9	26.4	1.9	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
438	*Angophora floribunda*	A1	4.7	69.4	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
439	*Livistona australis*	A1	2.5	19.6	NA	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
440	*Angophora floribunda*	A2	4.3	58.1	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
441	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
442	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
443	*Angophora floribunda*	Z4	4.1	52.8	2.2	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 6% (3.4m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
444	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
445	*Eucalyptus spp*	Z10	3.4	36.3	2.1	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 2% (0.9m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
446	*Glochidion ferdinandi*	Z1	2.2	15.2	1.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
447	*Angophora floribunda*	A1	6.6	136.8	2.7	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 2% (2.5m^2) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
448	*Angophora floribunda*	A1	4.8	72.4	2.4	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
449	*Angophora floribunda*	Z10	3.2	32.2	2.0	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
450	*Cinnamomum camphora*	Z3	3.8	45.4	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment. Exempt species.	Retain and protect
451	*Ceratopetalum apetalum*	A1	3.8	45.4	2.5	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 18% ($8m^2$) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
452	*Unknown species*	A1	5.5	95.0	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
453	*Allocasuarina torulosa*	A1	5.0	78.5	2.4	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
454	*Unknown species*	ZZ4	4.6	66.5	2.3	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 41% ($27.1m^2$) and into the SRZ. This is considered to be a major TPZ encroachment. The tree is dead. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
455	*Unknown species*	ZZ4	3.4	36.3	2.0	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road. The tree is dead.	Remove*
456	*Unknown species*	Z1	2.0	12.6	1.8	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 2% ($0.2m^2$) but not into the SRZ. This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
457	*Ceratopetalum apetalum*	A1	2.9	26.4	1.9	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
458	*Eucalyptus spp*	Z10	2.6	21.2	1.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
459	*Ceratopetalum apetalum*	A1	4.5	63.6	2.4	Footprint	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the trunk of the tree is located within the footprint of the proposed access road.	Remove*
460	*Ceratopetalum apetalum*	Z1	2.0	12.6	1.6	Footprint	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the trunk of the tree is located within the footprint of the proposed access road.	Remove*
461	*Livistona australis*	A1	2.5	19.6	NA	Minor	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 6% (1.1m^2). This is considered to be a minor and acceptable TPZ encroachment, indicating the proposed works will not significantly impact the tree.	Retain and protect
462	*Ceratopetalum apetalum*	A1	3.2	32.2	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
463	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
464	*Ceratopetalum apetalum*	A1	3.0	28.3	2.1	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
465	*Ceratopetalum apetalum*	A1	5.3	88.2	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
466	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
467	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
468	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
469	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
470	*Syncarpia glomulifera*	A1	4.7	69.4	2.3	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
471	*Ceratopetalum apetalum*	A1	4.1	52.8	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
472	*Eucalyptus botryoides*	A1	5.3	88.2	2.5	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
473	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
474	*Ceratopetalum apetalum*	A1	2.6	21.2	1.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
475	*Ceratopetalum apetalum*	A1	2.6	21.2	1.8	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
476	*Livistona australis*	A1	2.5	19.6	NA	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
477	*Ceratopetalum apetalum*	A1	3.3	34.2	2.0	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
478	*Allocasuarina torulosa*	A1	3.5	38.5	2.1	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
479	*Syncarpia glomulifera*	A1	3.6	40.7	2.1	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
480	*Ceratopetalum apetalum*	A1	3.9	47.8	2.6	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
481	*Eucalyptus botryoides*	A1	7.7	186.3	2.8	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
482	*Unknown species*	Z4	4.1	52.8	2.3	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
483	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
484	*Livistona australis*	A1	2.5	19.6	NA	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
485	*Ceratopetalum apetalum*	A1	3.2	32.2	2.1	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
486	*Eucalyptus robusta*	A1	5.2	84.9	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
487	*Allocasuarina littoralis*	ZZ4	4.2	55.4	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road. The tree is dead.	Remove*
488	*Eucalyptus umbra*	A2	4.9	75.4	2.4	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 45% ($34m^2$) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
489	*Livistona australis*	A1	2.5	19.6	NA	None	The has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, there is no proposed TPZ encroachment.	Retain and protect
490	*Unknown species*	ZZ4	3.8	45.4	2.2	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road. The tree is dead.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
491	*Angophora floribunda*	A1	7.3	167.4	2.8	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*
492	*Angophora floribunda*	ZZ4	4.1	52.8	2.3	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road. The tree is dead.	Remove*
493	*Unknown species*	ZZ4	3.6	40.7	2.1	Major	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed access road will encroach into the TPZ by 45% (18.4m^2) and into the SRZ. This is considered to be a major TPZ encroachment. The tree is dead. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree.	Remove*
494	*Eucalyptus botryoides*	A1	8.3	216.4	3.0	Major	The tree has not been identified on the survey and is located within the adjoining site. Based on the estimated location of the tree, the proposed access road will encroach into the TPZ by 14% (30.4m^2) but not into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
495	*Eucalyptus botryoides*	A1	5.4	91.6	2.5	Footprint	The tree is located within the adjoining site. The trunk of the tree is located within the footprint of the proposed access road.	Remove*

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Tree ID	Species	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
496	*Angophora floribunda*	A2	4.9	75.4	2.3	Major	The tree is located within the adjoining site. The proposed access road will encroach into the TPZ by 39% (29.2m^2) and into the SRZ. This is considered to be a major TPZ encroachment, indicating the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The removal of the tree is subject to the approval of Northern Beaches Council and the owner of the tree. It may be possible to retain the tree via tree sensitive design and construction of the proposed road.	Remove*
497	*Angophora floribunda*	A2	5.9	109.4	2.6	None	The tree is located within the adjoining site. No proposed TPZ encroachment.	Retain and protect
G1	*Livistona australis*	A1	2.5	19.6	NA	None	Group of 9 Cabbage Palms that have not been identified on the survey. Based on the estimated location of the trees, there is no proposed TPZ encroachment.	Retain and protect
G2	*Livistona australis*	A1	2.5	19.6	NA	None	Group of 15 Cabbage Palms that have not been identified on the survey. Based on the estimated location of the trees, there is no proposed TPZ encroachment.	Retain and protect

Notes:

- Remove* = The tree is located within an adjoining site and will be impacted by the proposed development. The removal of the tree is subject to the approval of Northern Beaches Council and the tree owner.

9. CONCLUSIONS

9.1 **Table 2:** Summary of the impact to trees by the development;

Impact	Reason	Category A		Category Z		Total
		AA	A	Z	ZZ	
Trees recommended to be removed	Building construction, new surfacing and/or proximity, or trees in poor condition.	99, 117	1*, 6*, 7*, 13*, 14*, 15*, 25*, 26*, 27*, 28*, 29*, 32*, 48*, 49*, 50*, 57*, 58*, 102, 144, 146, 157, 168, 188, 190, 408, 409, 410*, 411*, 418*, 419*, 420*, 422*, 423*, 425*, 426*, 429*, 431*, 432*, 438*, 439*, 440*, 448*, 451*, 452*, 453*, 459*, 486*, 488*, 491*, 494*, 495*, 496*	9*, 11*, 12*, 23*, 24*, 33*, 38*, 40, 56*, 59*, 60*, 61*, 100, 101, 105, 108, 110, 111, 112, 113, 121, 143, 147, 148, 152, 166, 167, 169, 170, 171, 172, 173, 174, 175, 189, 214, 227, 232, 236, 263, 281, 382, 402, 403, 414*, 424*, 430*, 436*, 437*, 449*, 460*	16*, 95, 114, 132, 200, 225, 405, 415*, 454*, 455*, 487*, 490*, 492*, 493*	**119 trees**
Trees recommended to be removed for APZ purposes	The tree has been identified for removal for APZ purposes.	None	252, 257	260	None	**3 trees**
Trees recommended to be retained	Removal of existing surfacing/ structures and/or installation of new surfacing/ structures will not impact the viability of the trees	22, 140, 186, 199, 215, 216, 217, 269, 271, 273, 284, 285, 289, 292, 352, 357, 359, 366, 389	2, 3, 10, 18, 19, 35, 36, 39, 45, 46, 52, 53, 62, 66, 67, 68, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 96, 97, 98, 103, 104, 106, 107, 109, 115, 116, 118, 119, 120, 122, 123, 124, 125, 126, 128, 129, 130, 131, 133, 134, 135, 136, 137, 138, 139, 141, 145, 149, 150, 153, 154, 155, 156, 158, 161, 162, 163, 177, 178, 184, 185, 187, 193, 196, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 213, 219, 220, 221, 222, 223, 224, 226, 229, 230, 231, 233, 234, 235, 237, 238, 241, 242, 243, 244, 245, 246, 247, 248, 250, 251, 253, 254, 255, 256, 258, 259, 261, 262, 264, 265, 266, 268, 270, 272, 274, 275, 276, 277, 278, 279, 280, 282, 283, 286, 287, 288, 290, 291, 293, 294, 296, 297, 298, 351, 353, 354, 355, 356, 358, 360, 361, 362, 363, 364, 365, 367, 368, 369, 370, 371, 372, 374, 375, 376, 378, 379, 380, 381, 383, 384, 385, 386, 387, 388, 391, 392, 393, 395, 396, 397, 399, 400, 401, 404, 406, 407, 412, 416, 417, 421, 427, 433, 434, 435, 441, 442, 444, 447, 457, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 483, 484, 485, 489, 497, G1, G2	4, 5, 8, 17, 20, 21, 30, 31, 34, 37, 41, 42, 43, 44, 47, 51, 54, 55, 63, 65, 69, 77, 78, 127, 142, 151, 159, 160, 164, 165, 176, 179, 180, 181, 182, 183, 191, 192, 194, 195, 197, 198, 212, 218, 228, 239, 240, 249, 267, 295, 373, 377, 390, 394, 398, 413, 443, 445, 446, 450, 456, 458, 482	64, 428	**323 trees & 2 groups of trees**

Notes:
* = The tree is located within an adjoining site and will be impacted by the proposed development. The removal of the tree is subject to the approval of Northern Beaches Council and the tree owner.

9.2 **Underground Services:** No services plan has been assessed in this report, all services plans should be subject to review by a consulting Arborist. Where possible underground services should be located outside the TPZ of trees to be retained. AS4970 Protection of trees on development sites (2009) recommends that all underground services located inside the TPZ of any tree to be retained should be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention.

If directional drilling is proposed, section 4.5.5 of AS4970-2009 says that 'The directional drilling bore should be at least 600 mm deep. The project Arborist should assess the likely impacts of boring and bore pits on retained trees'.[9]
If manual excavations are proposed, all excavations for the services should be carried out manually under the supervision of the project Arborist (minimum qualification AQF 5). Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. All roots greater than 40mm in diameter should be retained in the service trench. The service pipe should then be threaded below the retained roots where practical. Roots greater than 40mm within the alignment of the service pipe should only be severed/pruned under the approval of the project Arborist. All root pruning should be in accordance with AS4373 Pruning of amenity trees (2007). Open trenching in the SRZ of trees can be impractical without impacting significant roots, as often dense root growth is present in the SRZ. Open trenching should therefore be avoided in the SRZ. It is recommended that any section of pipe that is located in the SRZ of trees to be retained is installed via sub-surface boring/directional drilling methods only. The feasibility of sub-surface boring/directional drilling will need to be investigated by a sub-surface boring/directional drilling specialist. The project Arborist should provide advice and supervise excavations for bore pits, which must be carried out manually if located within the TPZ. The top of the pipe must be at least 600mm below the existing soil grade. The location of bore pits should be flexible in the TPZ to avoid significant roots, the project Arborist should assess and advise in writing the impact of any significant root severance to the condition of the tree.

[9] Council Of Standards Australia, *AS 4970 Protection of trees on development sites* (2009) page 18.

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9.3 **Bulk Earthworks - Soil Level Modifications (Cut and Fill):** No bulk earthworks or soil level modification plan has been assessed in this report, all bulk earthworks or soil level modification plans should be subject to review by a consulting Arborist. Cut and fill can significantly impact trees, as the per following;

9.3.1 **Cut:** A trees root system is generally located far shallower in the soil than is normally considered, and should be thought of as a 'root plate'. The majority of a trees root growth is usually found in the upper 600mm of the soil closest to the surface, but a percentage of the roots will extend deeper in the soil. An image has been included below that is taken from AS4970-2009, and provides an example of the structure of a trees root system. Any significant cut/lowering the soil level in the TPZ can impact the tree. The only way to identify the precise impact to a trees root system by cut in the TPZ is by carrying out detailed root investigation to identify the individual significant roots. No detailed root investigations have been undertaken as part of the assessment.

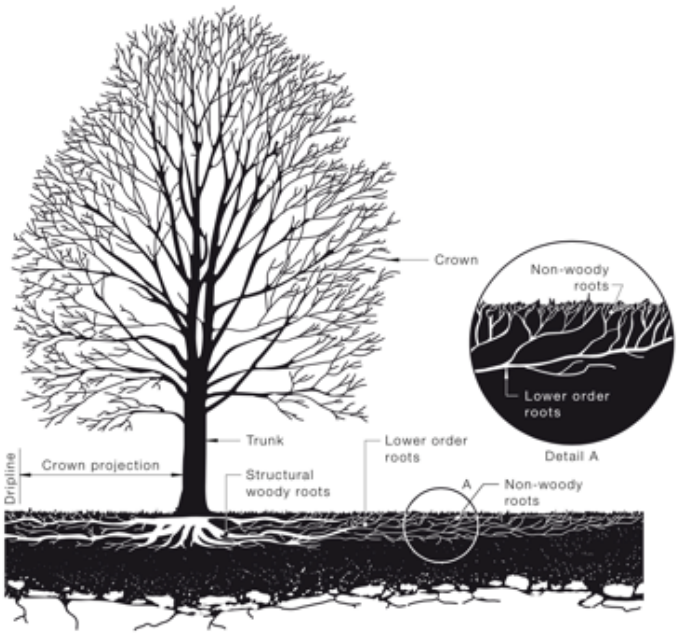

Image from AS4970-2009 showing the structure of a trees root system in normal (unobstructed) growing conditions.

9.3.2 **Fill:** Tree roots require air, water and nutrients to function properly. Increasing the soil level in the TPZ can impact the trees by reducing the availability of water, nutrients and air to the trees underlying root system and can cause the decline of a trees health and vigour. Placing fill directly against the trunk of a tree can potentially cause collar rot. Collar rot forms when soil against the trunk of the tree accelerates sapwood or heartwood decay.[10]

[10] Dunster, Julian A., Thomas Smiley, Nelda Matheny, and Sharon Lilly, *Tree Risk Assessment Manual*, Champaign, Illinois: International Society of Arboriculture (2013), page 108.

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10. RECOMMENDATIONS

10.1 This report assesses the impact of a proposed development at the subject site to all significant trees located within 10 metres of development works. The assessed development works include proposed access roads and easements only. Proposed civil plans have not been provided for assessment, therefore bulk earthworks (cut and fill), stormwater management and building envelopes have not been assessed within this report. Four hundred and forty-five trees and two groups of trees have been identified and assessed.

10.2 In Appendix 1 four site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans. The following site plans are included;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan
- Appendix 1C: Proposed Connection Road Plan
- Appendix 1D: Tree Retention & Removal Plan

10.3 One hundred and nineteen (119) trees have been recommended for removal to accommodate the development works, including tree 1*, 6*, 7*, 9*, 11*, 12*, 13*, 14*, 15*, 16*, 23*, 24*, 25*, 26*, 27*, 28*, 29*, 32*, 33*, 38*, 40, 48*, 49*, 50*, 56*, 57*, 58*, 59*, 60*, 61*, 95, 99, 100, 101, 102, 105, 108, 110, 111, 112, 113, 114, 117, 121, 132, 143, 144, 146, 147, 148, 152, 157, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 188, 189, 190, 200, 214, 225, 227, 232, 236, 263, 281, 382, 402, 403, 405, 408, 409, 410*, 411*, 414*, 415*, 418*, 419*, 420*, 422*, 423*, 424*, 425*, 426*, 429*, 430*, 431*, 432*, 436*, 437*, 438*, 439*, 440*, 448*, 449*, 451*, 452*, 453*, 454*, 455*, 459*, 460*, 486*, 487*, 488*, 490*, 491*, 492*, 493*, 494*, 495* and 496*. Refer to section 9.1, Table 2 for a list of the trees recommended to be removed by retention value. Tree 1*, 6*, 7*, 9*, 11*, 12*, 13*, 14*, 15*, 16*, 23*, 24*, 25*, 26*, 27*, 28*, 29*, 32*, 33*, 38*, 48*, 49*, 50*, 56*, 57*, 58*, 59*, 60*, 61*, 410*, 411*, 414*, 415*, 418*, 419*, 420*, 422*, 423*, 424*, 425*, 426*, 429*, 430*, 431*, 432*, 436*, 437*, 438*, 439*, 440*, 448*, 449*, 451*, 452*, 453*, 454*, 455*, 459*, 460*, 486*, 487*, 488*, 490*, 491*, 492*, 493*, 494*, 495* and 496*.are located within adjoining sites and will be impacted by the proposed access road construction works, the removal of these trees are subject to the approval of Northern Beaches Council and the tree owners.

10.4 An additional three (3) trees have been identified for removal for APZ purposes based on information from Advanced Bushfire Performance Solutions, including tree 252, 257 and 270. Refer to section 9.1, Table 2 for a list of the trees recommended to be removed for APZ purposes by retention value.

10.5 The remaining three hundred and twenty-three (323) trees and two (2) groups of trees can be retained in a viable condition, including tree 2, 3, 4, 5, 8, 10, 17, 18, 19, 20, 21, 22, 30, 31, 34, 35, 36, 37, 39, 41, 42, 43, 44, 45, 46, 47, 51, 52, 53, 54, 55, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 96, 97, 98, 103, 104, 106, 107, 109, 115, 116, 118, 119, 120, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 145, 149, 150, 151, 153, 154, 155, 156, 158, 159, 160, 161, 162, 163, 164, 165, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 191, 192, 193, 194, 195, 196, 197, 198, 199, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 226, 228, 229, 230, 231, 233, 234, 235, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 253, 254, 255, 256, 258, 259, 261, 262, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 404, 406, 407, 412, 413, 416, 417, 421, 427, 428, 433, 434, 435, 441, 442, 443, 444, 445, 446, 447, 450, 456, 457, 458, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 489, 497, G1 and G2.

10.6 All trees to be retained must be protected in accordance with AS4970-2009, details of which are included in section 11. Generic tree protection only has been included in section 11. Site specific tree protection should be determined by the project arborist upon completion of the final plans, including bulk earthworks, stormwater management, building platform locations etc. A Tree Protection Plan (TPP) should also be included in the Construction Management Plan (CMP) to increase the awareness and priority of tree protection to the construction personnel.

10.7 No landscape plan has been assessed in this report. See section 11.9 for general guidance in relation to minimising the impact of proposed landscaping to retained trees and replacement tree planting.

10.8 No services plan has been assessed in this report, all services plans should be subject to review by a consulting Arborist. Where possible underground services should be located outside the TPZ of trees to be retained. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques in accordance with AS4970-2009, see section 9.3 for more information.

10.9 No bulk earthworks or soil level modification plans have been assessed in this report, all bulk earthworks or soil level modification plans should be subject to review by a consulting Arborist. Cut and fill can significantly impact trees, see section 9.4 for more information.

10.10 This report does not provide approval for tree removal or pruning works. All recommendations in this report are subject to approval by the relevant authorities and/or tree owners. This report should be submitted as supporting evidence with the development application.

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11. TREE PROTECTION REQUIREMENTS

11.1 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site. This report and a copy of the site plans (Appendix 1) drawing must also be made available to any contractor prior to works commencing and during any on site operations.

11.2 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

11.3 **Tree work:** All tree work should be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

11.4 **Initial site meeting/on-going regular inspections:** The project Arborist is to hold a pre-construction site meeting with principal contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to tree protection that may arise. In accordance with AS4970-2009, the project Arborist should carryout regular site inspections to ensure works are carried out in accordance with this document throughout the development process. Site inspections are recommended on a monthly frequency throughout the development.

11.5 **Tree Protection Specifications:**

11.5.1 Trunk and Branch Protection: The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

11.5.2 Protective fencing: The protective fencing must be constructed of 1.8 metre ‘cyclone chainmesh fence’. The fencing should only be removed for the landscaping phase and this should be approved by the project Arborist. Where it is not feasible to install fencing at the specified location due to factors such restricting access to areas of the site or for constructing new structures, an alternative location and protection specification must be agreed with the project Arborist. Any modifications to the fencing locations must be approved by the project Arborist.

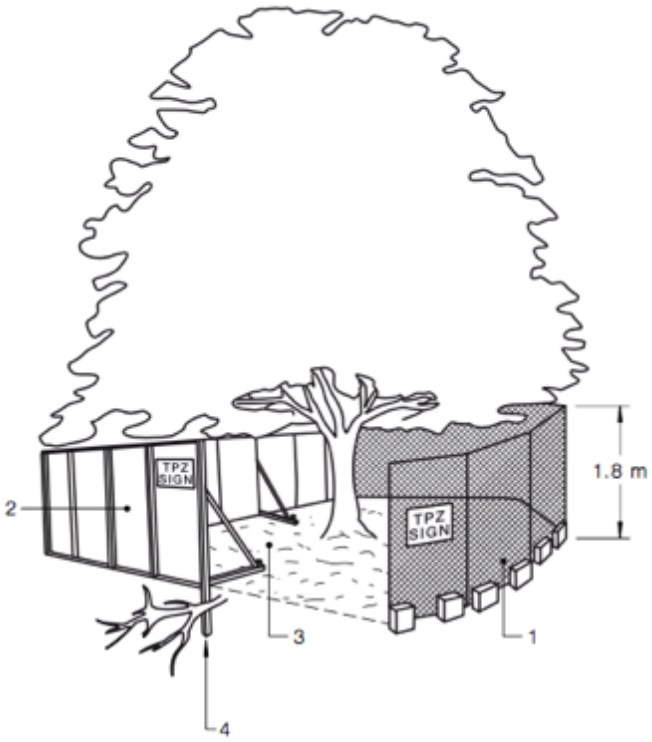
11.5.3 TPZ signage: Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

11.5.4 Mulch: Any areas of the TPZ located inside the subject site must be mulched to a depth of 75mm with good quality mulch. Mulch must not be built-up around the trunk the trees as it can cause collar rot.

11.5.5 Ground Protection: Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric, with timber/plywood boards overlaid. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified and approved by the project Arborist as required.

11.5.6 Temporary irrigation: Temporary irrigation should distribute water evenly throughout the area of the TPZ. The irrigation should be used for at minimum two hours weekly throughout all stages of the development, and may be required a higher frequency, this should be advised by the project Arborist.



LEGEND:
1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

An image from AS4970-2009,[11] with example tree protection.

[11] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.

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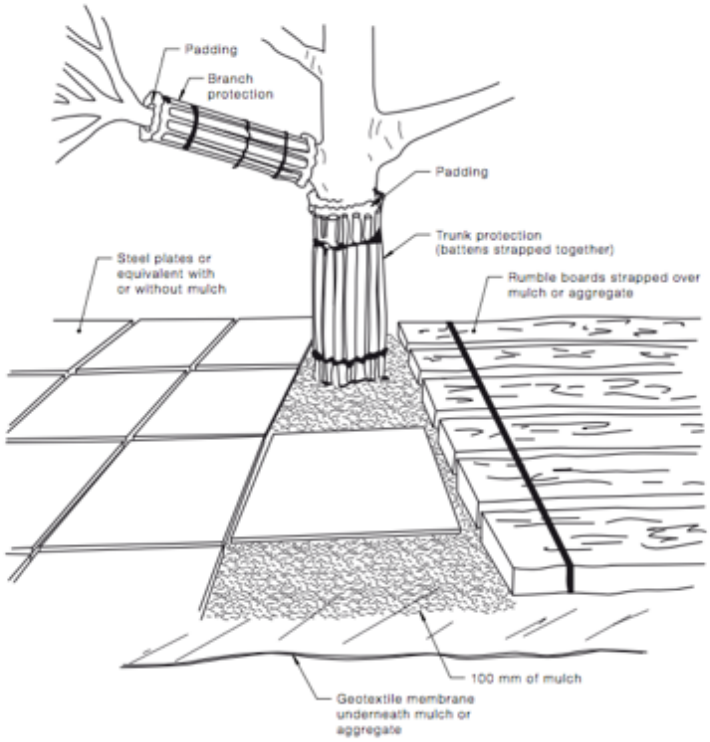

NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.

2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

An image from AS4970-2009,[12] with example tree protection.

11.6 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refuelling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

[12] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

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11.7 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the 'top down, pull back' method.

11.8 **Excavations:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 30mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[13] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

11.9 **Landscaping:** All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with a consulting Arborist to minimise the impact to trees. General guidance is provided below to minimise the impact of new landscaping to trees to be retained.

- All excavations for landscaping works should be manual and in accordance with section 11.8.
- Replacement planting for all trees recommended for removal should be incorporated into the landscape plan. It is recommended that at minimum one tree for each tree proposed to be removed are planted to maintain/increase overall canopy cover at the site when mature. Any replacement tree must be selected in accordance with AS2303-2015 Tree stock for landscape use.
- The location of new plantings inside the TPZ of trees to be retained should be flexible to avoid unnecessary damage to tree roots greater than 40mm in diameter.

[13] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

- Level changes should be minimised. The existing ground levels within the landscape areas should not be lowered by more than 50mm or increased by more 100mm without assessment by a consulting Arborist.
- New retaining walls should be avoided. Where new retaining walls are proposed inside the TPZ of trees to be retained, they should be constructed from tree sensitive material, such as timber sleepers, that require minimal footings/excavations. If brick retaining walls are proposed inside the TPZ, considerer pier and beam type footings to bridge significant roots that are critical to the trees condition. Retaining walls must be located outside the SRZ and sleepers/beams located above existing soil grades.
- New footpaths and hard surfaces should be minimised, as they can limit the availability of water, nutrients and air to the trees root system. Where they are proposed, they should be constructed on or above existing soil grades to minimise root disturbance and consider using a permeable surface. Footpaths should be located outside the SRZ.
- Where fill/sub base is used inside the TPZ, fill material should be a coarse granular material that does not restrict the flow of water and air to the root system below. This type of material will also reduce the impact of soil compaction during construction.
- Any new fencing in the TPZ of trees should constructed carefully to avoid impacting significant roots. The location of fence posts should be flexible to allow for the retention of root greater than 40mm in diameter. The base of fence panels should be located above existing soil grades.

11.10 **Underground Services:** Where possible underground services should be located outside the TPZ of trees to be retained. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention. No roots greater than 30mm in diameter should be severed during the installation of service pipes unless approved in writing by the project Arborist.

11.11 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

11.12 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

11.13 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

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12. CONSTRUCTION HOLD POINTS FOR TREE PROTECTION

12.1 **Hold Points:** Below is a sequence of hold points requiring project Arborist certification throughout the development process**.** It provides a list of hold points that must be checked and certified. All certification must be provided in written format upon completion of the development. The final certification must include details of any instructions for remediation undertaken during the development. The principal contractor should be responsible for implementing all tree protection requirements.

Hold Point	Stage	Date Completed and Signature of Project Arborist Responsible
Project Arborist to hold pre construction site meeting with principal contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise. Project Arborist to mark all trees approved for removal under DA consent.	Prior to development work commencing	
Project Arborist to assess and certify that tree protection has been installed in accordance with AS4970-2009 prior to works commencing at site.	Prior to development work commencing.	
In accordance with AS4970-2009 the project arborist should carryout regular site inspections to ensure works are carried out in accordance with the recommendations. Site inspections are recommended on a monthly frequency.	On-going throughout the development	
The removal of existing structures inside the TPZ of any tree to be retained, such as the existing buildings and hard surfaces must be supervised by the project Arborist.	Demolition	
Project Arborist to supervise all manual excavations and root pruning inside the TPZ of any tree to be retained. Project Arborist to approve all pruning of roots greater than 30mm inside TPZ. All root pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3.	Construction	
Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009.	Construction	
Project Arborist to approve relocation of tree protection for landscaping. All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimise the impact to trees.	Construction/ Landscape	
After all demolition, construction and landscaping works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.	Upon completion of development	

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13. BIBLIOGRAPHY/REFERENCES

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- *Pittwater 21 Development Control Plan 2014*, https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/planning-controls.

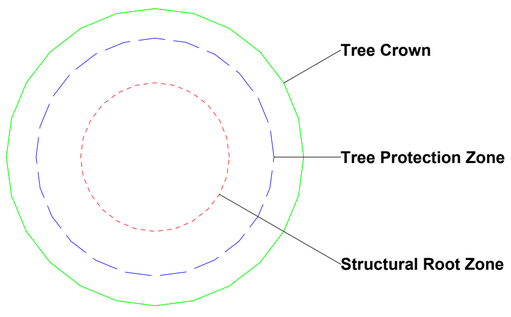
14. LIST OF APPENDICES

The following are included in the appendices:

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan
- Appendix 1C: Proposed Connection Road Plan
- Appendix 1D: Tree Retention & Removal Plan
- Appendix 2: Tree Inspection Schedule
- Appendix 3: Further Information of Methodology

Bryce Claassens
Diploma of Arboriculture (AQF5)
Cert III Landscape Construction
Member Arboriculture Australia
Quantified Tree Risk Assessment (QTRA)
ISA Tree Risk Assessment Qualification (TRAQ)

Tree Lgend



0 120m

Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074
sales@urbanarbor.com.au, (02) 8004 2802

Site Location: 120-122 Mona Vale Road, Warriewood, NSW

SCALE : 1 : 800 @ A1

DATE : 06/05/2024

Prepared by: Bryce Claassens

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1A- Existing Site Plan

N

MONA VALE ROAD

LOT FOR FUTURE ACQUISITION BY RMS

1
2311m²
D.P. 383009

2
2601m²
(EX. ACCESSWAY)

3
2023m²
(EX. ACCESSWAY)

4
2093m²
(EX. ACCESSWAY)

5
1032m²
(EX. ACCESSWAY)

6
1058m²
(EX. ACCESSWAY)

7
1136m²
(EX. ACCESSWAY)

8
700.0m²

9
917m²

10
1317m²
(EX.ACCESSWAY)

11
1017m²

12
1001m²

13
1013m²

14
1001m²

15
1001m²

16
1033m²

17
943.9m²

18
1020m²

19
520.2m²

20
520.3m²

21
520.3m²

22
520.4m²

23
520.5m²

24
520.5m²

25
526.1m²

26
517.7m²

27
558.6m²

28
585.4m²

29
521.8m²

30
524.1m²

31
524.3m²

32
524.4m²

33
524.5m²

34
524.5m²

35
543.2m²

36
500.2m²

37
500.5m²

38
500.3m²

39
500.4m²

40
641.2m²

41
721.9m²

42
658.6m²

43
596.8m²

44
505.3m²

45
534.3m²

46
515.1m²

47
796.1m²

48
703.2m²

49
562.8m²

50
671.2m²

51
1307m²
(EX. ACCESSWAY)

52
1174m²
(EX. ACCESSWAY)

53
1196m²

54
1193m²

55
1052m²
(EX. ACCESSWAY)

56
1114m²
(EX. ACCESSWAY)

57
1004m²
(EX. ACCESSWAY)

58
500.2m²
(EX. ACCESSWAY)

59
500.6m²

60
500.0m²

61
531.0m²

62
530.9m²

63
3253m²

PROPOSED PUBLIC RESERVE

PROPOSED PUBLIC RESERVE

PROPOSED PUBLIC RESERVE

PROPOSED PUBLIC RESERVE

PROPOSED PUBLIC RESERVE

ROAD 2

ROAD 3

ROAD 4

ST STREET

BOUNDARY

NARRABEEN CREEK

LAND PROPOSED TO BE ACQUIRED BY PITTWATER COUNCIL

100
D.P. 1174851

10
D.P. 5055

2
D.P. 383009

(A) PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(B) PROPOSED RIGHT OF ACCESS 6 WIDE AND VARIABLE
(B) PROPOSED EASEMENT TO DRAIN WATER 6 WIDE & VARIABLE
(B) PROPOSED EASEMENT FOR SERVICES 6 WIDE & VARIABLE
(C) RIGHT OF CARRIAGEWAY 8 WIDE (DP 1045166)

Tree Legend

Tree Crown
Tree Protection Zone
Structural Root Zone

0 120m

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Site Location: 120-122 Mona Vale Road, Warriewood, NSW

SCALE : 1 : 800 @ A1

DATE : 22/04/2024

Prepared by: Bryce Claassens

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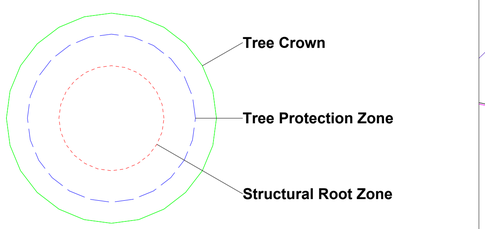
Appendix 1B- Proposed Site Plan

Tree Lgend



0 80m

Urban Arbor Pty Ltd

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Site Location: 120-122 Mona Vale Road, Warriewood, NSW

SCALE :	DATE :
1 : 500 @ A1	06/05/2024

Prepared by: Bryce Claassens

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Appendix 1C- Proposed Connection Road Plan

Tree Lgend

Retain

Remove - Development Impact

Remove - Asset Protection Zone (APZ)

0 120m

Urban Arbor Pty Ltd

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Site Location: 120-122 Mona Vale Road, Warriewood, NSW

SCALE : 1 : 800 @ A1

DATE : 30/09/2024

Prepared by: Bryce Claassens

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Appendix 1D - Tree Retention & Removal Plan

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
1	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	17	6	540					540	590	Good	Good	High	1. Long	A1	6.5	2.7	None.
2	Smooth Barked Apple	*Angophora costata*	Semi-mature	10	3	240					240	260	Good	Good	Medium	1. Long	A1	2.9	1.9	None.
3	Turpentine	*Syncarpia glomulifera*	Semi-mature	10	3	270					270	310	Good	Good	Medium	1. Long	A1	3.2	2.0	None.
4	Bangalay	*Eucalyptus botryoides*	Semi-mature	8	4	250					250	310	Fair	Fair	Low	3. Short	Z10	3.0	2.0	Suppressed by adjacent trees.
5	Smooth Barked Apple	*Angophora costata*	Semi-mature	9	2	190					190	200	Good	Good	Low	5. Small/Young	Z1	2.3	1.7	None.
6	Bangalay	*Eucalyptus botryoides*	Mature	19	8	1250					1250	1400	Good	Fair	High	1. Long	A1	15.0	3.8	Co-dominant included stems at 2m.
7	Red Bloodwood	*Corymbia gummifera*	Mature	18	6	660					660	750	Good	Good	High	1. Long	A1	7.9	2.9	None.
8	White Leaved Stringy Bark	*Eucalyptus globoidea*	Semi-mature	7	2	330					330	370	Poor	Poor	Low	4. Remove	Z4	4.0	2.2	Central stem failure. Foliage consist of epicormic growth only.
9	Smooth Barked Apple	*Angophora costata*	Veteran	24	8	1090					1090	1250	Fair	Poor	Very High	4. Remove	Z5	13.1	3.6	Previous lower stem failure to North with cavity and decay. Borer damage in canopy with kino ooze. Wound at base with good response growth. Wound on low limb over driveway. If the tree is to be retained, at a minimum an aerial assessment and detailed risk assessment should be carried out.
10	Red Bloodwood	*Corymbia gummifera*	Mature	12	3	370					370	420	Fair	Good	Medium	2. Medium	A2	4.4	2.3	Not marked on survey. Reduced foliage density for species, with selective dieback.
11	Rough Barked Apple	*Angophora floribunda*	Semi-mature	10	3	300					300	400	Good	Fair	Medium	2. Medium	Z10	3.6	2.3	Asymmetric canopy with minor trunk lean. Suppressed by adjacent trees.
12	Smooth Barked Apple	*Angophora costata*	Mature	18	7	630					630	750	Fair	Fair	High	3. Short	Z9	7.6	2.9	Swelling on southern stem at union, with possible cavity at union of stem on trunk. If tree is to be retained, an aerial assessment is recommended to determine the extent of damage.
13	Bangalay	*Eucalyptus botryoides*	Mature	20	4	520					520	580	Fair	Good	High	2. Medium	A2	6.2	2.6	Reduced foliage density with selective dieback.
14	Turpentine	*Syncarpia glomulifera*	Mature	10	4	360	280				456	500	Good	Good	Medium	1. Long	A1	5.5	2.5	DAB estimated.
15	Smooth Barked Apple	*Angophora costata*	Semi-mature	12	4	310					310	340	Fair	Good	Medium	2. Medium	A2	3.7	2.1	Reduced foliage density.
16	Red Bloodwood	*Corymbia gummifera*	Dead	16	5	650					650	750	Dead	Fair	Medium	4. Remove	ZZ4	7.8	2.9	Dead tree.
17	Turpentine	*Syncarpia glomulifera*	Semi-mature	7	2	200					200	270	Good	Good	Low	5. Small/Young	Z1	2.4	1.9	None.
18	Eucalypt	*Eucalyptus spp*	Mature	20	5	780					780	860	Fair	Good	High	2. Medium	A2	9.4	3.1	Reduced foliage density, with dieback and epicormic growth.
19	Smooth Barked Apple	*Angophora costata*	Mature	18	5	440					440	500	Good	Fair	High	1. Long	A2	5.3	2.5	Crossing branches.
20	Smooth Barked Apple	*Angophora costata*	Young	7	1	120					120	140	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Not marked on survey.
21	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	2	150	240				283	430	Good	Good	Low	5. Small/Young	Z1	3.4	2.3	Not marked on survey.
22	Grey Ironbark	*Eucalyptus paniculata*	Mature	24	9	800					800	900	Good	Good	Very High	1. Long	AA1	9.6	3.2	Not marked on survey. Located within the adjoinining property. DBH estimated. 4m from boundary.
23	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	15	5	470					470	530	Poor	Fair	Medium	4. Remove	Z4	5.6	2.5	Advanced stages of decline.
24	Bangalay	*Eucalyptus botryoides*	Semi-mature	9	3	450					450	500	Poor	Poor	Low	4. Remove	Z4	5.4	2.5	Advanced stages of decline, with decay column at base. Old termite damage.
25	Grey Ironbark	*Eucalyptus paniculata*	Mature	18	8	680					680	850	Good	Good	High	1. Long	A1	8.2	3.1	None.
26	Smooth Barked Apple	*Angophora costata*	Mature	11	4	360					360	410	Good	Fair	Medium	1. Long	A1	4.3	2.3	Asymmetric canopy.
27	Grey Ironbark	*Eucalyptus paniculata*	Mature	20	6	560					560	690	Good	Good	High	1. Long	A1	6.7	2.8	None.
28	Grey Ironbark	*Eucalyptus paniculata*	Mature	18	6	610					610	710	Fair	Good	High	2. Medium	A2	7.3	2.9	Apical dieback with epicormic growth along primary branches.
29	Grey Ironbark	*Eucalyptus paniculata*	Mature	20	6	710					710	820	Good	Fair	High	1. Long	A1	8.5	3.0	Asymmetric canopy to the North.
30	Grey Ironbark	*Eucalyptus paniculata*	Young	8	1.5	190					190	200	Good	Fair	Low	5. Small/Young	Z1	2.3	1.7	Not marked on survey. Co-dominant included stems at 3m.
31	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	2	250	180				308	300	Good	Good	Low	5. Small/Young	Z1	3.7	2.0	None.
32	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	10	2	250					250	300	Good	Good	Medium	1. Long	A1	3.0	2.0	None.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
33	Smooth Barked Apple	*Angophora costata*	Mature	17	6	750					750	850	Poor	Fair	Medium	4. Remove	Z4	9.0	3.1	Advanced stage of decline.
34	Grey Ironbark	*Eucalyptus paniculata*	Young	7	1	140					140	160	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Not marked on survey.
35	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	10	2	210					210	260	Good	Good	Medium	1. Long	A1	2.5	1.9	Not marked on survey.
36	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	3	350					350	400	Good	Good	Medium	1. Long	A1	4.2	2.3	Located within the adjoining property. Not tagged. DBH estimated.
37	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	1	250					250	300	Fair	Fair	Low	3. Short	Z4	3.0	2.0	Located within the adjoining property. Not tagged. DBH estimated. Central dieback.
38	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	8	3	310					310	370	Good	Fair	Medium	2. Medium	Z10	3.7	2.2	Asymmetric canopy to the North with trunk lean.
39	Turpentine	*Syncarpia glomulifera*	Mature	10	6	460	400				610	650	Good	Fair	Medium	2. Medium	A2	7.3	2.8	Co-dominant stems at base. Canopy separation.
40	Grey Ironbark	*Eucalyptus paniculata*	Mature	8	5	670					670	750	Good	Poor	Medium	4. Remove	Z5	8.0	2.9	Severe damage at previous point of central stem failure.
41	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	6	2	240					240	290	Good	Good	Low	5. Small/Young	Z1	2.9	2.0	Not marked on survey.
42	Olive	*Olea europaea*	Mature	6	3	160	140				213	250	Good	Good	Low	5. Small/Young	Z3	2.6	1.8	Not marked on survey.
43	Olive	*Olea europaea*	Semi-mature	6	2	150	130				198	210	Good	Good	Low	5. Small/Young	Z3	2.4	1.7	Not marked on survey. Exempt from protection.
44	Macadamia Nut	*Macadamia integrifolia*	Semi-mature	6	3	290					290	320	Good	Good	Low	5. Small/Young	Z1	3.5	2.1	Not marked on survey.
45	Smooth Barked Apple	*Angophora costata*	Mature	10	4	400	210				452	470	Good	Good	Medium	1. Long	A1	5.4	2.4	None.
46	Coastal Banksia	*Banksia integrifolia*	Mature	7	3	240	200				312	350	Good	Good	Medium	1. Long	A1	3.7	2.1	None.
47	Jacaranda	*Jacaranda mimosifolia*	Semi-mature	7	3	180	160	140			279	410	Good	Fair	Low	5. Small/Young	Z3	3.3	2.3	Not marked on survey. Co-dominant included stems at base.
48	Coastal Banksia	*Banksia integrifolia*	Mature	8	3	230	200				305	390	Good	Good	Medium	1. Long	A1	3.7	2.2	Not marked on survey.
49	Bangalay	*Eucalyptus botryoides*	Mature	17	8	700	530	640			1087	1070	Good	Fair	High	1. Long	A2	13.0	3.4	Previous failures.
50	Turpentine	*Syncarpia glomulifera*	Mature	17	4	420	400				580	600	Good	Good	High	1. Long	A1	7.0	2.7	Not marked on survey.
51	Black She Oak	*Allocasuarina littoralis*	Mature	8	3	260					260	320	Good	Good	Low	5. Small/Young	Z1	3.1	2.1	Not marked on survey.
52	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	10	3	240					240	280	Good	Good	Medium	1. Long	A1	2.9	1.9	None.
53	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	13	5	400					400	430	Good	Fair	Medium	1. Long	A1	4.8	2.3	Not marked on survey. Asymmetric to the SW.
54	Turpentine	*Syncarpia glomulifera*	Young	6	1	110					110	130	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	None.
55	Grey Ironbark	*Eucalyptus paniculata*	Young	9	1.5	170					170	200	Good	Good	Low	5. Small/Young	Z1	2.0	1.7	None.
56	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	6	3	100	100	210			253	300	Good	Fair	Low	5. Small/Young	Z1	3.0	2.0	Co-dominant included stems near base.
57	Bangalay	*Eucalyptus botryoides*	Mature	20	9	840					840	940	Good	Fair	High	2. Medium	A2	10.1	3.2	Previous storm damage.
58	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	12	2	230					230	270	Good	Good	Medium	1. Long	A1	2.8	1.9	None.
59	Cheese Tree	*Glochidion ferdinandi*	Young	6	2	120	100				156	140	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	None.
60	Cheese Tree	*Glochidion ferdinandi*	Young	6	2	120	100				156	140	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	None.
61	Cheese Tree	*Glochidion ferdinandi*	Young	6	2	120	100				156	140	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	None.
62	Turpentine	*Syncarpia glomulifera*	Mature	15	4	490					490	580	Good	Good	High	1. Long	A1	5.9	2.6	None.
63	Bangalay	*Eucalyptus botryoides*	Mature	22	7	700					700	780	Poor	Fair	High	4. Remove	Z4	8.4	3.0	Significant decline with epicormic growth and apical dieback. DBH estimated due to access. Tree not tagged.
64	Eucalypt	*Eucalyptus spp*	Dead	14	3	450					450	530	Dead	Fair	Low	4. Remove	ZZ4	5.4	2.5	Dead tree.
65	Eucalypt	*Eucalyptus spp*	Mature	15	5	430					430	500	Poor	Fair	Medium	4. Remove	Z4	5.2	2.5	Apical dieback. Advanced stage of decline
66	Bangalay	*Eucalyptus botryoides*	Mature	18	5	550					550	590	Fair	Good	High	2. Medium	A2	6.6	2.7	Selective dieback of lower branches.
67	Turpentine	*Syncarpia glomulifera*	Mature	17	3	400					400	470	Good	Good	High	1. Long	A1	4.8	2.4	Not marked on survey.
68	Turpentine	*Syncarpia glomulifera*	Mature	16	3	360					360	420	Good	Good	Medium	1. Long	A1	4.3	2.3	None.
69	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	17	4	360	180				402	420	Poor	Fair	Medium	4. Remove	Z4	4.8	2.3	Advanced stage of decline.
70	Turpentine	*Syncarpia glomulifera*	Mature	15	3	350					350	420	Good	Fair	Medium	1. Long	A1	4.2	2.3	Co-dominant stems at 5m. DBH estimated due to access. Tree not tagged.
71	Turpentine	*Syncarpia glomulifera*	Mature	15	3	400	180				439	500	Good	Good	Medium	1. Long	A1	5.3	2.5	DBH estimated due to access. Tree not tagged.
72	Grey Ironbark	*Eucalyptus paniculata*	Semi-mature	16	4	360					360	390	Fair	Good	Medium	2. Medium	A2	4.3	2.2	Minor dieback.
73	Turpentine	*Syncarpia glomulifera*	Mature	15	3	190	410	250			516	650	Good	Good	Medium	1. Long	A1	6.2	2.8	DAB estimated.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
74	Bangalay	*Eucalyptus botryoides*	Mature	17	4	400					400	450	Fair	Fair	Medium	2. Medium	A2	4.8	2.4	Early stage of damage decline.
75	Turpentine	*Syncarpia glomulifera*	Mature	16	4	550					550	630	Good	Fair	High	1. Long	A1	6.6	2.7	Co-dominant stems.
76	Narrow Leaved Ironbark	*Eucalyptus crebra*	Mature	20	7	620					620	700	Good	Good	High	1. Long	A1	7.4	2.8	None.
77	Sydney Golden Wattle	*Acacia longifolia*	Mature	7	3	180					180	230	Fair	Fair	Low	3. Short	Z4	2.2	1.8	Not marked on survey. Early stage of decline. Lantana in canopy.
78	Sydney Golden Wattle	*Acacia longifolia*	Semi-mature	6	2	120	100				156	170	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Not marked on survey.
79	Smooth Barked Apple	*Angophora costata*	Mature	24	6	610					610	660	Good	Fair	High	1. Long	A2	7.3	2.8	Asymmetric crown shape due to power line pruning.
80	Turpentine	*Syncarpia glomulifera*	Mature	16	4	630					630	700	Good	Fair	High	1. Long	A1	7.6	2.8	Co-dominant stems.
81	Turpentine	*Syncarpia glomulifera*	Mature	16	4	500					500	540	Good	Good	High	1. Long	A1	6.0	2.6	None.
82	Turpentine	*Syncarpia glomulifera*	Mature	14	3	360					360	410	Good	Good	Medium	1. Long	A1	4.3	2.3	None.
83	Turpentine	*Syncarpia glomulifera*	Mature	15	3	420					420	440	Good	Good	Medium	1. Long	A1	5.0	2.3	None.
84	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	16	6	580					580	650	Good	Fair	High	1. Long	A1	7.0	2.8	Significant trunk lean to NE
85	Turpentine	*Syncarpia glomulifera*	Semi-mature	12	2	240					240	250	Good	Good	Medium	1. Long	A1	2.9	1.8	None.
86	Turpentine	*Syncarpia glomulifera*	Mature	16	4	410					410	460	Good	Good	High	1. Long	A1	4.9	2.4	None.
87	Turpentine	*Syncarpia glomulifera*	Semi-mature	15	3	260					260	320	Good	Good	Medium	1. Long	A1	3.1	2.1	None.
88	Turpentine	*Syncarpia glomulifera*	Mature	14	3	360					360	390	Good	Good	Medium	1. Long	A1	4.3	2.2	None.
89	Turpentine	*Syncarpia glomulifera*	Mature	15	3	340					340	380	Good	Good	Medium	1. Long	A1	4.1	2.2	None.
90	Turpentine	*Syncarpia glomulifera*	Mature	15	3	240	210				319	410	Good	Fair	Medium	1. Long	A1	3.8	2.3	Co-dominant stems.
91	Turpentine	*Syncarpia glomulifera*	Mature	17	4	390					390	430	Good	Good	High	1. Long	A1	4.7	2.3	None.
92	Turpentine	*Syncarpia glomulifera*	Mature	17	4	380					380	420	Good	Good	High	1. Long	A1	4.6	2.3	None.
93	Turpentine	*Syncarpia glomulifera*	Mature	17	4	430					430	510	Good	Good	High	1. Long	A1	5.2	2.5	None.
94	Smooth Barked Apple	*Angophora costata*	Mature	13	5	400					400	500	Good	Fair	Medium	1. Long	A2	4.8	2.5	Asymmetric canopy to North.
95	Grey Ironbark	*Eucalyptus paniculata*	Dead	17	5	800					800	900	Dead	Fair	Low	4. Remove	ZZ4	9.6	3.2	Dead tree.
96	Turpentine	*Syncarpia glomulifera*	Mature	15	3	390					390	430	Good	Good	Medium	1. Long	A1	4.7	2.3	None.
97	Grey Ironbark	*Eucalyptus paniculata*	Mature	17	5	390					390	450	Good	Good	High	1. Long	A1	4.7	2.4	None.
98	Grey Ironbark	*Eucalyptus paniculata*	Mature	19	7	850					850	1000	Good	Good	High	1. Long	A1	10.2	3.3	None.
99	Grey Ironbark	*Eucalyptus paniculata*	Mature	22	10	790					790	900	Good	Good	Very High	1. Long	AA1	9.5	3.2	Some previous smaller branch failures
100	Turpentine	*Syncarpia glomulifera*	Semi-mature	10	2	300					300	340	Good	Fair	Medium	2. Medium	Z10	3.6	2.1	Suppressed by adjacent tree. Asymmetric canopy with Co-dominant stems.
101	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	3	280					280	340	Good	Fair	Medium	3. Short	Z10	3.4	2.1	Suppressed by adjacent tree. Previous failure resulting in large wound. Poor response growth and decay.
102	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	22	5	490					490	580	Fair	Fair	High	2. Medium	A2	5.9	2.6	Selective dieback. Borer damage with swelling on upper trunk.
103	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	28	9	980					980	1150	Fair	Fair	Very High	2. Medium	A2	11.8	3.5	Epicormic growth along primary branches. Several previous failures. Evidence of wounds and swelling on branches in upper canopy.
104	Grey Ironbark	*Eucalyptus paniculata*	Mature	13	5	430					430	470	Fair	Fair	Medium	2. Medium	A2	5.2	2.4	Large dead limb. Selective dieback.
105	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	18	4	590					590	680	Poor	Poor	Medium	4. Remove	Z5	7.1	2.8	Previous failed central stem with cavity and bird activity. Several wounds and cavity openings on Northern side of trunk indicating possible decay column.
106	Turpentine	*Syncarpia glomulifera*	Mature	13	4	330					330	380	Good	Good	Medium	1. Long	A1	4.0	2.2	Not marked on survey.
107	Grey Ironbark	*Eucalyptus paniculata*	Mature	25	7	710					710	830	Good	Good	High	1. Long	A1	8.5	3.1	Some epicormic growth along primary branches.
108	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	17	6	600					600	680	Poor	Fair	Medium	4. Remove	Z4	7.2	2.8	Advanced stage of decline. Tree not tagged due to limited access. DBH estimated.
109	Grey Ironbark	*Eucalyptus paniculata*	Mature	25	7	750					750	850	Fair	Good	High	2. Medium	A2	9.0	3.1	Reduced foliage density with minor apical dieback and epicormic growth.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
110	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	15	6	590					590	640	Poor	Fair	Medium	4. Remove	Z4	7.1	2.7	Advanced stage of decline.
111	Grey Ironbark	*Eucalyptus paniculata*	Mature	15	6	560					560	640	Fair	Poor	High	4. Remove	Z5	6.7	2.7	Large longitudinal wound on Eastern side of trunk with moderate response growth. 50% loss of cambium. Asymmetric canopy with trunk lean.
112	Eucalypt	*Eucalyptus spp*	Mature	18	7	640					640	750	Fair	Fair	High	3. Short	Z4	7.7	2.9	Significant decline with canopy predominantly consisting of epicormic growth
113	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	15	6	650					650	750	Fair	Poor	High	4. Remove	Z5	7.8	2.9	Reduced foliage density for species. Decay column on trunk.
114	Eucalypt	*Eucalyptus spp*	Dead	18	5	700					700	800	Dead	Fair	Low	4. Remove	ZZ4	8.4	3.0	Tree not tagged due to access. DBH estimated.
115	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	16	6	750					750	860	Fair	Good	High	2. Medium	A2	9.0	3.1	None.
116	Grey Ironbark	*Eucalyptus paniculata*	Mature	25	8	810					810	900	Good	Good	High	1. Long	A1	9.7	3.2	None.
117	Grey Ironbark	*Eucalyptus paniculata*	Mature	30	10	1000					1000	1120	Good	Good	Very High	1. Long	AA1	12.0	3.5	None.
118	Cabbage Palm	*Livistona australis*	Mature	13	1.5	350					350	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
119	Grey Ironbark	*Eucalyptus paniculata*	Mature	23	7	620					620	660	Fair	Good	High	2. Medium	A2	7.4	2.8	Reduced canopy density with epicormic growth and minor apical dieback.
120	Grey Ironbark	*Eucalyptus paniculata*	Mature	23	8	710					710	750	Good	Good	High	1. Long	A1	8.5	2.9	None.
121	Thin Leaved Stringy Bark	*Eucalyptus eugenioides*	Veteran	23	9	1140					1140	1200	Fair	Fair	High	3. Short	Z4	13.7	3.6	Selective dieback throughout canopy with epicormic growth. Early stages of decline
122	Turpentine	*Syncarpia glomulifera*	Mature	16	4	550					550	580	Good	Good	Medium	1. Long	A1	6.6	2.6	None.
123	Grey Ironbark	*Eucalyptus paniculata*	Mature	25	7	620					620	660	Good	Good	High	1. Long	A1	7.4	2.8	None.
124	Turpentine	*Syncarpia glomulifera*	Mature	14	4	490					490	530	Good	Good	Medium	1. Long	A1	5.9	2.5	None.
125	Grey Ironbark	*Eucalyptus paniculata*	Mature	17	6	460					460	518	Good	Good	Medium	1. Long	A1	5.5	2.5	None.
126	Eucalypt	*Eucalyptus spp*	Mature	18	7	640					640	690	Good	Good	High	1. Long	A1	7.7	2.8	None.
127	Smooth Barked Apple	*Angophora costata*	Mature	17	3	380					380	400	Fair	Fair	Medium	3. Short	Z10	4.6	2.3	Suppressed by adjacent trees. Low LCR.
128	Smooth Barked Apple	*Angophora costata*	Mature	17	6	580					580	610	Good	Good	Medium	1. Long	A1	7.0	2.7	Asymmetric canopy.
129	Grey Ironbark	*Eucalyptus paniculata*	Mature	23	7	690					690	750	Good	Good	High	1. Long	A1	8.3	2.9	None.
130	Grey Ironbark	*Eucalyptus paniculata*	Mature	23	6	620					620	670	Good	Fair	High	1. Long	A1	7.4	2.8	None.
131	Grey Ironbark	*Eucalyptus paniculata*	Mature	17	5	670					670	710	Good	Good	High	1. Long	A1	8.0	2.9	None.
132	Eucalypt	*Eucalyptus spp*	Dead	13	2	350					350	420	Dead	Fair	Low	4. Remove	ZZ4	4.2	2.3	None.
133	Eucalypt	*Eucalyptus spp*	Mature	16	7	830					830	910	Good	Good	High	1. Long	A1	10.0	3.2	None.
134	Smooth Barked Apple	*Angophora costata*	Mature	13	6	650					650	720	Good	Fair	Medium	2. Medium	A2	7.8	2.9	Asymmetric canopy due to power line pruning.
135	Smooth Barked Apple	*Angophora costata*	Mature	13	5	420					420	470	Good	Good	Medium	1. Long	A1	5.0	2.4	None.
136	Smooth Barked Apple	*Angophora costata*	Mature	16	7	670					670	750	Good	Fair	High	2. Medium	A2	8.0	2.9	Asymmetric canopy due to power line pruning.
137	Grey Ironbark	*Eucalyptus paniculata*	Mature	18	6	670					670	730	Good	Good	High	1. Long	A1	8.0	2.9	None.
138	Turpentine	*Syncarpia glomulifera*	Mature	17	6	980					980	1100	Good	Fair	High	1. Long	A2	11.8	3.4	Asymmetric canopy due to power line pruning. Cavity at base with good response growth.
139	Eucalypt	*Eucalyptus spp*	Mature	18	6	700					700	780	Good	Fair	High	2. Medium	A4	8.4	3.0	Previous branch with possible cavities at failure points for habitat.
140	Grey Ironbark	*Eucalyptus paniculata*	Mature	28	7	810					810	880	Good	Good	Very High	1. Long	AA1	9.7	3.1	None.
141	Smooth Barked Apple	*Angophora costata*	Veteran	30	10	1050					1050	1100	Fair	Fair	Very High	3. Short	A4	12.6	3.4	Significant reduced foliage area. Approximately 40% coverage. Selective dieback. Evidence of hollow throughout tree at branch failures. DBH estimated due to limited trunk access.
142	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	16	6	750					750	830	Good	Fair	High	2. Medium	Z10	9.0	3.1	Asymmetric canopy with significant trunk lean.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
143	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	20	5	810					810	900	Fair	Fair	High	3. Short	Z4	9.7	3.2	Low foliage density with apical dieback. Aerial termite nest at 8m.
144	Turpentine	*Syncarpia glomulifera*	Mature	16	5	740					740	800	Good	Good	High	1. Long	A1	8.9	3.0	None.
145	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	18	7	690					690	750	Fair	Good	High	2. Medium	A2	8.3	2.9	Not marked on survey. Reduced foliage density with minor apical dieback and epicormic growth.
146	Smooth Barked Apple	*Angophora costata*	Mature	17	6	630					630	680	Good	Fair	High	1. Long	A2	7.6	2.8	Evidence of bird damage at branch unions with kino ooze. Selective dieback in canopy from borer damage.
147	Eucalypt	*Eucalyptus spp*	Mature	10	4	700					700	750	Fair	Poor	Medium	4. Remove	Z10	8.4	2.9	Central trunk failure at 5m. Epicormic regrowth. Cavity at failed section.
148	Eucalypt	*Eucalyptus spp*	Mature	13	6	600					600	650	Fair	Fair	Medium	3. Short	Z4	7.2	2.8	Not marked on survey. Early stages of decline. DBH estimated. Tree not tagged due to access.
149	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey.
150	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey.
151	Smooth Barked Apple	*Angophora costata*	Semi-mature	8	4	270	270	240			451	450	Good	Fair	Low	5. Small/Young	Z1	5.4	2.4	Recent road works mechanical damage on trunk.
152	Eucalypt	*Eucalyptus spp*	Mature	15	5	580					580	630	Poor	Fair	Medium	4. Remove	Z4	7.0	2.7	Not marked on survey. Advanced stage of decline. 20% live foliage.
153	Turpentine	*Syncarpia glomulifera*	Mature	14	3	380					380	450	Good	Good	Medium	1. Long	A1	4.6	2.4	None.
154	Grey Ironbark	*Eucalyptus paniculata*	Mature	17	7	700					700	780	Good	Good	High	1. Long	A1	8.4	3.0	None.
155	Eucalypt	*Eucalyptus spp*	Mature	18	7	800	900				1204	1200	Good	Fair	High	1. Long	A1	14.4	3.6	Co-dominant stems at base. DBH estimated. Tree not tagged due to access.
156	Turpentine	*Syncarpia glomulifera*	Mature	8	5	520					520	580	Good	Fair	Medium	1. Long	A1	6.2	2.6	Not marked on survey.
157	Cabbage Palm	*Livistona australis*	Semi-mature	8	1.5	350					350	NA	Good	Good	Medium	1. Long	A2	2.5	NA	Vine cover on trunk.
158	Cabbage Palm	*Livistona australis*	Mature	12	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not tagged.
159	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	3	300					300	350	Good	Fair	Low	5. Small/Young	Z10	3.6	2.1	Previous storm damage. Tree not tagged. DBH estimated.
160	Turpentine	*Syncarpia glomulifera*	Semi-mature	7	3	250					250	280	Good	Fair	Low	5. Small/Young	Z10	3.0	1.9	Vine cover and trunk lean.
161	Cabbage Palm	*Livistona australis*	Mature	10	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
162	Turpentine	*Syncarpia glomulifera*	Mature	14	4	520					520	600	Good	Good	Medium	1. Long	A1	6.2	2.7	None.
163	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	20	10	900					900	1050	Good	Fair	Very High	1. Long	A4	10.8	3.4	Previous large branch failures. Several cavities and hollows throughout tree. Possible habitat value. Tree not tagged. DBH estimated.
164	Olive	*Olea europaea*	Mature	10	6	420	350	180	160		597	600	Good	Fair	Low	1. Long	Z3	7.2	2.7	Previously topped at 4m. Exempt from protection.
165	Olive	*Olea europaea*	Mature	8	5	180	230	190			348	450	Good	Fair	Low	1. Long	Z3	4.2	2.4	Previously topped at 4m . exempt from protection.
166	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	18	5	800					800	880	Poor	Fair	Medium	4. Remove	Z4	9.6	3.1	Advanced stages of decline. DBH estimated. Tree not tagged
167	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	16	5	500					500	570	Poor	Fair	Medium	4. Remove	Z4	6.0	2.6	Advanced stages of decline. DBH estimated. Tree not tagged
168	Black She Oak	*Allocasuarina littoralis*	Mature	10	4	300	500				583	700	Good	Fair	Medium	2. Medium	A1	7.0	2.8	Not marked on survey. Previous stem failures. DBH estimated.
169	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	8	4	500					500	540	Good	Fair	Low	1. Long	Z3	6.0	2.6	Exempt from protection.
170	Turpentine	*Syncarpia glomulifera*	Mature	10	4	280	360				456	450	Good	Fair	Medium	3. Short	Z10	5.5	2.4	Suppressed by adjacent trees. Asymmetric canopy. Dead central leader.
171	Camphor Laurel	*Cinnamomum camphora*	Mature	12	4	440	250	320			599	600	Good	Fair	Low	1. Long	Z3	7.2	2.7	Exempt from protection.
172	Eucalypt	*Eucalyptus spp*	Mature	15	5	600					600	680	Fair	Fair	Medium	3. Short	Z4	7.2	2.8	Canopy predominantly consisting of epicormic growth. Apical dieback 50% live foliage.
173	Lombardy Poplar	*Populus nigra 'Italica'*	Mature	17	2.5	470					470	530	Good	Fair	Low	2. Medium	Z3	5.6	2.5	Small cavity at base. Exempt from protection.
174	Lombardy Poplar	*Populus nigra 'Italica'*	Mature	17	3	520					520	600	Good	Fair	Low	2. Medium	Z3	6.2	2.7	Small cavity at base. Exempt from protection.
175	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	8	4	120	200	220	160		358	400	Good	Fair	Low	5. Small/Young	Z1	4.3	2.3	Multi stemmed at base.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
176	Rubber Tree	*Ficus elastica*	Mature	13	7	570					570	630	Fair	Fair	Low	1. Long	Z3	6.8	2.7	Low foliage density for species. Exempt from protection
177	Coastal Banksia	*Banksia integrifolia*	Semi-mature	9	4	200	270	250			419	500	Good	Fair	Medium	2. Medium	A1	5.0	2.5	Not marked on survey. Co-dominant stems at base. DAB estimated.
178	Turpentine	*Syncarpia glomulifera*	Mature	8	4	330	430				542	600	Good	Fair	High	1. Long	A1	6.5	2.7	Co-dominant stems at base with tight union.
179	Red Mahogany	*Eucalyptus resinifera*	Mature	8	4	710					710	810	Fair	Fair	High	3. Short	Z10	8.5	3.0	Trunk topped at 4-5m. Low foliage density for species with selective dieback.
180	Hackberry	*Celtis spp*	Mature	6.5	3	310					310	430	Good	Fair	Low	2. Medium	Z3	3.7	2.3	Exempt species.
181	Hackberry	*Celtis spp*	Semi-mature	5	2	200					200	240	Good	Good	Low	5. Small/Young	Z3	2.4	1.8	Exempt species.
182	Hackberry	*Celtis spp*	Semi-mature	5	2	200					200	240	Good	Good	Low	5. Small/Young	Z3	2.4	1.8	Not marked on survey. Exempt species.
183	Olive	*Olea europaea*	Semi-mature	5	2.5	130	140				191	250	Good	Fair	Low	5. Small/Young	Z3	2.3	1.8	Not marked on survey. Exempt species.
184	Old Man Banksia	*Banksia serrata*	Mature	8	3	490					490	570	Good	Good	High	1. Long	A1	5.9	2.6	Branches recently lopped for fence construction.
185	Turpentine	*Syncarpia glomulifera*	Mature	12	5	680					680	720	Good	Good	High	1. Long	A1	8.2	2.9	None.
186	Smooth Barked Apple	*Angophora costata*	Mature	16	7	720					720	850	Good	Good	Very High	1. Long	AA1	8.6	3.1	Surrounded by bedrock.
187	Cabbage Palm	*Livistona australis*	Semi-mature	5	1.5	360					360	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey.
188	Pecan	*Carya illinoinensis*	Mature	9	4	400					400	430	Good	Fair	Medium	2. Medium	A1	4.8	2.3	Not marked on survey. Co-dominant stems at 1.5m with included bark at union.
189	Callery Pear	*Pyrus calleryana*	Mature	6	3	220	120	160	100	100	329	550	Good	Fair	Low	2. Medium	Z1	4.0	2.6	Not marked on survey.
190	Macadamia Nut	*Macadamia integrifolia*	Mature	7	3	170	280	190	140		404	400	Good	Good	Medium	1. Long	A1	4.8	2.3	Not marked on survey.
191	Carob	*Ceratonia siliqua*	Mature	7	4	300	230	320			495	880	Good	Fair	Medium	2. Medium	Z10	5.9	3.1	Not marked on survey. Soil potentially undermined on East side of tree. Vine cover through crown. Epicormic shoots at base.
192	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	6	1.5	130	140				191	250	Good	Good	Low	5. Small/Young	Z1	2.3	1.8	Not marked on survey.
193	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	2	120	280				305	390	Good	Good	Medium	1. Long	A1	3.7	2.2	Not marked on survey.
194	Red Mulberry	*Morus rubra*	Semi-mature	6	3	220	80				234	300	Good	Fair	Low	2. Medium	Z3	2.8	2.0	Not marked on survey. Exempt species.
195	Black Mulberry	*Morus nigra*	Mature	5	5	150	200	170	90	120	337	800	Good	Fair	Low	2. Medium	Z3	4.0	3.0	Not marked on survey. Exempt species.
196	Pecan	*Carya illinoinensis*	Mature	9	6	680					680	630	Good	Fair	Medium	1. Long	A1	8.2	2.7	Not marked on survey. Trunk wound with good response growth.
197	Olive	*Olea europaea*	Mature	6	2	370					370	390	Good	Fair	Low	2. Medium	Z3	4.4	2.2	Not marked on survey. Exempt species. Trunk wound.
198	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	14	6	870	300				920	1100	Good	Fair	High	3. Short	Z9	11.0	3.4	Large trunk wound more than 50% circumference. Relatively good response growth, however unlikely to fully occlude.
199	Smooth Barked Apple	*Angophora costata*	Mature	17	7	840					840	1050	Good	Good	Very High	1. Long	AA1	10.1	3.4	Surrounded by and growing over bedrock.
200	Forest Oak	*Allocasuarina torulosa*	Dead	12	2	420					420	480	Dead	Poor	Medium	4. Remove	ZZ4	5.0	2.4	Not marked on survey. Dead tree.
201	Black She Oak	*Allocasuarina littoralis*	Semi-mature	9	2	200					200	250	Good	Good	Medium	1. Long	A1	2.4	1.8	Not marked on survey. No access to trunk, no tag.
202	Black She Oak	*Allocasuarina littoralis*	Mature	12	3	350					350	400	Good	Good	High	1. Long	A1	4.2	2.3	Not marked on survey. No access to trunk, no tag.
203	Turpentine	*Syncarpia glomulifera*	Mature	12	6	700					700	770	Good	Good	High	1. Long	A1	8.4	3.0	Surrounded by bedrock.
204	Red Mahogany	*Eucalyptus resinifera*	Mature	15	7	750					750	900	Fair	Good	Very High	2. Medium	A2	9.0	3.2	Surrounded by bedrock. Selective dieback.
205	Blueberry Ash	*Elaeocarpus reticulatus*	Semi-mature	9	2	150	100				180	240	Good	Good	Medium	1. Long	A1	2.2	1.8	Not marked on survey.
206	Blueberry Ash	*Elaeocarpus reticulatus*	Semi-mature	9	1.5	160					160	190	Good	Good	Medium	1. Long	A1	2.0	1.6	Not marked on survey.
207	Forest Oak	*Allocasuarina torulosa*	Semi-mature	9	2	160	180				241	400	Good	Fair	Medium	1. Long	A1	2.9	2.3	Not marked on survey.
208	Smooth Barked Apple	*Angophora costata*	Mature	13	4	370					370	430	Good	Fair	High	1. Long	A1	4.4	2.3	Asymmetric crown shape.
209	Turpentine	*Syncarpia glomulifera*	Semi-mature	10	3	330					330	350	Good	Fair	Medium	1. Long	A1	4.0	2.1	Not marked on survey. Asymmetric crown shape.
210	Black She Oak	*Allocasuarina littoralis*	Mature	12	2.5	320					320	390	Good	Fair	Medium	2. Medium	A1	3.8	2.2	Not marked on survey. Large trunk wound with relatively good response growth adjacent to wound.
211	Smooth Barked Apple	*Angophora costata*	Mature	14	6	510					510	580	Fair	Good	High	2. Medium	A2	6.1	2.6	Low foliage density for species with epicormic growth and selective dieback.
212	Black She Oak	*Allocasuarina littoralis*	Mature	12	3	370					370	450	Good	Fair	High	3. Short	Z9	4.4	2.4	Not marked on survey. Significant trunk wound. Asymmetric crown shape.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
213	Black She Oak	*Allocasuarina littoralis*	Semi-mature	8	3	190	110				220	320	Good	Fair	Medium	2. Medium	A1	2.6	2.1	Not marked on survey. Asymmetric crown shape.
214	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	13	4	390					390	490	Fair	Fair	High	3. Short	Z4	4.7	2.5	Not marked on survey. Apical dieback with epicormic growth.
215	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	15	8	970					970	1100	Good	Good	Very High	1. Long	AA4	11.6	3.4	Possible landscape remnant. Multiple hollows. Possible ecological significance.
216	Forest Oak	*Allocasuarina torulosa*	Mature	16	5	450					450	650	Good	Good	Very High	1. Long	AA1	5.4	2.8	Significant for species.
217	Forest Oak	*Allocasuarina torulosa*	Mature	16	5	540					540	670	Good	Fair	Very High	1. Long	AA1	6.5	2.8	Significant for species. Previous branch failure.
218	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	1.5	160					160	210	Good	Fair	Medium	5. Small/Young	Z1	2.0	1.7	Not marked on survey.
219	Forest Oak	*Allocasuarina torulosa*	Mature	11	3	300					300	380	Good	Fair	High	2. Medium	A1	3.6	2.2	Possible previous loss of central leader. Adjacent growth appears well attached.
220	Turpentine	*Syncarpia glomulifera*	Mature	12	3	240	180	460			549	800	Good	Fair	High	2. Medium	A1	6.6	3.0	Three stems from base. Previous failure.
221	Eucalypt	*Eucalyptus spp*	Semi-mature	10	3	260					260	280	Good	Good	Medium	1. Long	A1	3.1	1.9	Not marked on survey.
222	Turpentine	*Syncarpia glomulifera*	Mature	13	4	380	330				503	680	Good	Good	High	1. Long	A1	6.0	2.8	None.
223	Turpentine	*Syncarpia glomulifera*	Mature	14	4	380					380	460	Good	Good	High	1. Long	A1	4.6	2.4	None.
224	Turpentine	*Syncarpia glomulifera*	Mature	13	4	480	340				588	800	Good	Good	High	1. Long	A1	7.1	3.0	Co-dominant stems from base.
225	Eucalypt	*Eucalyptus spp*	Dead	15	7	550					550	650	Dead	Poor	High	4. Remove	ZZ4	6.6	2.8	Dead tree.
226	Forest Oak	*Allocasuarina torulosa*	Mature	9	4	330					330	400	Good	Fair	Medium	2. Medium	A2	4.0	2.3	Trunk wound with fungal fruiting body (Phellinus spp). Extent of decay unknown.
227	Smooth Barked Apple	*Angophora costata*	Mature	16	7	650					650	740	Fair	Fair	High	3. Short	Z4	7.8	2.9	Low foliage density for species with apical dieback.
228	Pecan	*Carya illinoinensis*	Semi-mature	8	2.5	150					150	200	Good	Good	Low	5. Small/Young	Z1	2.0	1.7	Not marked on survey.
229	Forest Oak	*Allocasuarina torulosa*	Mature	9	4	220	140	180	290		430	850	Good	Good	High	1. Long	A1	5.2	3.1	Not marked on survey.
230	Turpentine	*Syncarpia glomulifera*	Mature	10	4	360	450				576	890	Good	Good	High	1. Long	A1	6.9	3.2	Not marked on survey.
231	Bangalay	*Eucalyptus botryoides*	Mature	10	5	210	350				408	500	Good	Good	High	1. Long	A1	4.9	2.5	Not marked on survey. Surrounded by bedrock.
232	Red Mahogany	*Eucalyptus resinifera*	Mature	11	7	640					640	760	Poor	Fair	High	4. Remove	Z4	7.7	2.9	Not marked on survey. Advanced decline.
233	Forest Oak	*Allocasuarina torulosa*	Mature	10	4	350					350	400	Good	Fair	High	2. Medium	A1	4.2	2.3	Not marked on survey. Trunk wound with relatively good response growth.
234	Bangalay	*Eucalyptus botryoides*	Mature	12	6	470					470	530	Fair	Fair	High	2. Medium	A2	5.6	2.5	Not marked on survey. Apical dieback. Asymmetric crown.
235	Red Mahogany	*Eucalyptus resinifera*	Mature	15	6	630					630	700	Good	Good	High	1. Long	A1	7.6	2.8	Not marked on survey.
236	Red Mahogany	*Eucalyptus resinifera*	Mature	13	5	430					430	520	Fair	Fair	High	3. Short	Z4	5.2	2.5	Apical dieback with epicormic growth.
237	Red Mahogany	*Eucalyptus resinifera*	Mature	10	4	320					320	360	Fair	Fair	Medium	2. Medium	A2	3.8	2.2	Low foliage density for species. Asymmetric crown.
238	Forest Oak	*Allocasuarina torulosa*	Mature	11	4	390					390	450	Good	Fair	High	2. Medium	A2	4.7	2.4	Significant vine cover through crown.
239	Turpentine	*Syncarpia glomulifera*	Semi-mature	5	2.5	230					230	370	Good	Fair	Medium	3. Short	Z9	2.8	2.2	Significant trunk damage at base.
240	Black She Oak	*Allocasuarina littoralis*	Mature	7.5	4	340					340	400	Good	Fair	High	3. Short	Z6	4.1	2.3	Mechanical damage at base with fill/cut surrounding tree.
241	Bangalay	*Eucalyptus botryoides*	Mature	13	7	660					660	750	Good	Fair	High	2. Medium	A2	7.9	2.9	Fill and rubbish at base.
242	Smooth Barked Apple	*Angophora costata*	Semi-mature	10	3.5	270					270	300	Good	Good	Medium	1. Long	A1	3.2	2.0	Not marked on survey. Fill at base.
243	Cabbage Palm	*Livistona australis*	Mature	9	2	340					340	NA	Good	Good	High	1. Long	A1	3.0	NA	Unable to access trunk. No tag.
244	Bangalay	*Eucalyptus botryoides*	Mature	15	6	700					700	750	Good	Good	High	1. Long	A1	8.4	2.9	Not marked on survey.
245	Red Mahogany	*Eucalyptus resinifera*	Semi-mature	16	4	290					290	350	Good	Good	Medium	1. Long	A1	3.5	2.1	None.
246	Blueberry Ash	*Elaeocarpus reticulatus*	Mature	8	3	210	140				252	250	Good	Good	Medium	1. Long	A1	3.0	1.8	Not marked on survey.
247	Eucalypt	*Eucalyptus spp*	Mature	18	6	610					610	680	Good	Good	High	1. Long	A1	7.3	2.8	Not marked on survey. Minor trunk lean.
248	Turpentine	*Syncarpia glomulifera*	Mature	20	7	570					570	620	Good	Good	High	1. Long	A1	6.8	2.7	Not marked on survey. Rubbing branches in crown
249	Blueberry Ash	*Elaeocarpus reticulatus*	Semi-mature	8	3	120	140				184	250	Good	Good	Medium	1. Long	Z1	2.2	1.8	Not marked on survey.
250	Smooth Barked Apple	*Angophora costata*	Mature	15	7	510					510	620	Fair	Good	High	2. Medium	A2	6.1	2.7	Low foliage density for species.
251	Smooth Barked Apple	*Angophora costata*	Semi-mature	12	3	260					260	310	Fair	Good	Medium	2. Medium	A2	3.1	2.0	Low foliage density for species.
252	Forest Oak	*Allocasuarina torulosa*	Semi-mature	8	4	270					270	310	Good	Fair	Medium	2. Medium	A1	3.2	2.0	Trunk wound with relatively good response growth.
253	Smooth Barked Apple	*Angophora costata*	Semi-mature	12	3	240					240	270	Good	Good	Medium	1. Long	A1	2.9	1.9	Not marked on survey.
254	Smooth Barked Apple	*Angophora costata*	Semi-mature	11	3	240					240	260	Good	Fair	Medium	2. Medium	A1	2.9	1.9	Not marked on survey. Asymmetric crown shape.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
255	Forest Oak	*Allocasuarina torulosa*	Semi-mature	11	3	260					260	340	Good	Fair	Medium	2. Medium	A1	3.1	2.1	Not marked on survey. Co-dominant stems with bark inclusion at 5m.
256	Forest Oak	*Allocasuarina torulosa*	Mature	14	3	360					360	410	Good	Fair	High	2. Medium	A1	4.3	2.3	Not marked on survey. Trunk wound.
257	Forest Oak	*Allocasuarina torulosa*	Mature	14	3	360					360	410	Good	Fair	High	2. Medium	A1	4.3	2.3	Not marked on survey. Trunk wound.
258	Red Mahogany	*Eucalyptus resinifera*	Semi-mature	10	3	260					260	290	Good	Good	Medium	1. Long	A1	3.1	2.0	Not marked on survey.
259	Red Mahogany	*Eucalyptus resinifera*	Mature	19	7	600					600	640	Good	Good	High	1. Long	A1	7.2	2.7	None.
260	Forest Oak	*Allocasuarina torulosa*	Semi-mature	8	3	180					180	210	Good	Good	Medium	1. Long	Z1	2.2	1.7	Not marked on survey.
261	Unknown	*Unknown species*	Mature	14	4	310					310	360	Good	Good	High	1. Long	A1	3.7	2.2	Not marked on survey.
262	Forest Oak	*Allocasuarina torulosa*	Mature	14	3	540					540	590	Fair	Fair	High	3. Short	A4	6.5	2.7	Not marked on survey. Trunk decay, termite nests, co-dominant stems with included bark and crown dieback. Possible ecological significance.
263	Eucalypt	*Eucalyptus spp*	Mature	17	3	510					510	560	Poor	Fair	High	4. Remove	Z4	6.1	2.6	Not marked on survey. Advanced decline.
264	Smooth Barked Apple	*Angophora costata*	Mature	25	10	790					790	850	Fair	Good	Very High	2. Medium	A2	9.5	3.1	Minor tip dieback with epicormic growth.
265	Forest Oak	*Allocasuarina torulosa*	Mature	12	3	390					390	440	Good	Fair	High	2. Medium	A1	4.7	2.3	Trunk wound.
266	Smooth Barked Apple	*Angophora costata*	Mature	12	2	360					360	420	Good	Fair	Medium	2. Medium	A1	4.3	2.3	Previous trunk failure. Asymmetric crown.
267	Forest Oak	*Allocasuarina torulosa*	Mature	10	4	310					310	360	Good	Fair	Medium	3. Short	Z9	3.7	2.2	Not marked on survey. Large trunk wound and trunk lean.
268	Turpentine	*Syncarpia glomulifera*	Mature	13	4	360					360	410	Good	Good	High	1. Long	A1	4.3	2.3	Not marked on survey.
269	Forest Oak	*Allocasuarina torulosa*	Mature	23	7	700					700	890	Good	Good	Very High	1. Long	AA1	8.4	3.2	Significant for species.
270	Forest Oak	*Allocasuarina torulosa*	Mature	20	4	570					570	630	Good	Fair	Very High	2. Medium	A1	6.8	2.7	Not marked on survey. Trunk damage. Growing directly adjacent to bedrock
271	Forest Oak	*Allocasuarina torulosa*	Mature	22	5	500					500	550	Good	Good	Very High	1. Long	AA1	6.0	2.6	None.
272	Unknown	*Unknown species*	Mature	13	4	330					330	370	Good	Fair	Medium	2. Medium	A1	4.0	2.2	Not marked on survey. Failure of central leader. Trunk wound with relatively good response growth.
273	Forest Oak	*Allocasuarina torulosa*	Mature	22	7	490					490	580	Good	Good	Very High	1. Long	AA1	5.9	2.6	Asymmetric crown shape.
274	Forest Oak	*Allocasuarina torulosa*	Mature	22	6	610					610	680	Good	Fair	Very High	2. Medium	A2	7.3	2.8	Significant vine cover through crown.
275	Turpentine	*Syncarpia glomulifera*	Mature	18	5	490					490	540	Good	Good	High	1. Long	A1	5.9	2.6	Not marked on survey.
276	Bangalay	*Eucalyptus botryoides*	Mature	22	4	350					350	400	Good	Good	High	1. Long	A1	4.2	2.3	Not marked on survey. Asymmetric crown shape.
277	Forest Oak	*Allocasuarina torulosa*	Mature	16	4	300					300	340	Good	Good	Medium	1. Long	A1	3.6	2.1	Not marked on survey.
278	Smooth Barked Apple	*Angophora costata*	Mature	19	5	450					450	550	Good	Good	High	1. Long	A1	5.4	2.6	Weeds at base.
279	Forest Oak	*Allocasuarina torulosa*	Mature	12	4	140	270				304	350	Good	Good	High	1. Long	A1	3.6	2.1	Not marked on survey.
280	Forest Oak	*Allocasuarina torulosa*	Semi-mature	13	2	200					200	240	Good	Good	Medium	1. Long	A1	2.4	1.8	Not marked on survey.
281	Grey Gum	*Eucalyptus punctata*	Semi-mature	10	3	360					360	420	Fair	Fair	Medium	3. Short	Z4	4.3	2.3	Not marked on survey. In decline.
282	Turpentine	*Syncarpia glomulifera*	Mature	16	3	560					560	650	Good	Good	High	1. Long	A1	6.7	2.8	None.
283	Turpentine	*Syncarpia glomulifera*	Mature	14	5	360					360	400	Good	Good	High	1. Long	A1	4.3	2.3	Not marked on survey.
284	Forest Oak	*Allocasuarina torulosa*	Mature	24	6	600					600	740	Good	Good	Very High	1. Long	AA1	7.2	2.9	None.
285	Forest Oak	*Allocasuarina torulosa*	Mature	20	6	710					710	880	Good	Fair	Very High	1. Long	AA1	8.5	3.1	Not marked on survey. Minor trunk lean.
286	Smooth Barked Apple	*Angophora costata*	Mature	17	6	330					330	360	Good	Good	High	1. Long	A1	4.0	2.2	None.
287	Forest Oak	*Allocasuarina torulosa*	Mature	16	4	320					320	360	Good	Fair	Medium	2. Medium	A1	3.8	2.2	Not marked on survey. Trunk wound with relatively good response growth.
288	Turpentine	*Syncarpia glomulifera*	Semi-mature	12	3	260					260	290	Good	Good	Medium	1. Long	A1	3.1	2.0	Not marked on survey.
289	Smooth Barked Apple	*Angophora costata*	Mature	25	8	600					600	740	Good	Good	Very High	1. Long	AA1	7.2	2.9	None.
290	Forest Oak	*Allocasuarina torulosa*	Mature	12	4	380					380	420	Good	Good	High	1. Long	A1	4.6	2.3	Not marked on survey. Minor trunk wound.
291	Forest Oak	*Allocasuarina torulosa*	Semi-mature	9	3	240					240	340	Good	Fair	Medium	2. Medium	A1	2.9	2.1	Not marked on survey. Trunk lean and vine cover.
292	Smooth Barked Apple	*Angophora costata*	Mature	30	10	830					830	950	Good	Good	Very High	1. Long	AA1	10.0	3.2	None.
293	Turpentine	*Syncarpia glomulifera*	Semi-mature	10	3	290					290	330	Good	Good	Medium	1. Long	A1	3.5	2.1	Not marked on survey.
294	Forest Oak	*Allocasuarina torulosa*	Mature	14	3	330					330	360	Good	Good	Medium	1. Long	A1	4.0	2.2	Not marked on survey.
295	Forest Oak	*Allocasuarina torulosa*	Mature	16	3	380					380	410	Good	Fair	High	3. Short	Z9	4.6	2.3	Not marked on survey. Trunk wound from base to 8m.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
296	Bangalay	*Eucalyptus botryoides*	Semi-mature	11	3	220					220	270	Good	Fair	Medium	2. Medium	A1	2.6	1.9	Not marked on survey. Intertwined with adjacent smaller Turpentine.
297	Grey Gum	*Eucalyptus punctata*	Mature	17	5	380					380	430	Good	Good	High	1. Long	A1	4.6	2.3	Not marked on survey.
298	Smooth Barked Apple	*Angophora costata*	Semi-mature	13	3	280					280	330	Good	Good	Medium	1. Long	A1	3.4	2.1	Not marked on survey. No access to trunk due to thick lantana. No tag on trunk.
351	Forest Oak	*Allocasuarina torulosa*	Mature	13	5	430					430	480	Good	Fair	High	2. Medium	A1	5.2	2.4	Wound below union of Co-dominant stems at 7m with relatively good response growth.
352	Bangalay	*Eucalyptus botryoides*	Mature	21	12	770					770	860	Good	Good	Very High	1. Long	AA1	9.2	3.1	Large hanger in lower crown.
353	Forest Oak	*Allocasuarina torulosa*	Mature	9	4	290					290	350	Good	Good	High	1. Long	A1	3.5	2.1	Not marked on survey. Asymmetric crown shape.
354	Forest Oak	*Allocasuarina torulosa*	Mature	9	4	380					380	440	Good	Good	High	1. Long	A1	4.6	2.3	Not marked on survey. Asymmetric crown shape.
355	Forest Oak	*Allocasuarina torulosa*	Semi-mature	11	2.5	220					220	250	Good	Fair	Medium	2. Medium	A1	2.6	1.8	Not marked on survey. Asymmetric crown shape with minor trunk lean.
356	Forest Oak	*Allocasuarina torulosa*	Mature	13	4	330					330	370	Good	Fair	Medium	2. Medium	A1	4.0	2.2	Not marked on survey. Vine cover through lower crown.
357	Smooth Barked Apple	*Angophora costata*	Mature	30	12	850					850	920	Good	Good	Very High	1. Long	AA1	10.2	3.2	Bedrock at base.
358	Forest Oak	*Allocasuarina torulosa*	Semi-mature	9	3	260					260	300	Good	Fair	Medium	2. Medium	A1	3.1	2.0	Suppressed by adjacent tree.
359	Red Mahogany	*Eucalyptus resinifera*	Mature	18	7	590					590	650	Good	Good	Very High	1. Long	AA1	7.1	2.8	Not marked on survey.
360	Smooth Barked Apple	*Angophora costata*	Mature	16	6	390					390	430	Good	Fair	High	2. Medium	A1	4.7	2.3	Not marked on survey. Minor trunk lean with vine cover on trunk.
361	Forest Oak	*Allocasuarina torulosa*	Mature	14	3	410					410	450	Good	Fair	High	2. Medium	A1	4.9	2.4	Not marked on survey. Vine cover.
362	Cabbage Palm	*Livistona australis*	Mature	8	2	310					310	NA	Good	Good	High	1. Long	A1	3.0	NA	Not marked on survey.
363	Forest Oak	*Allocasuarina torulosa*	Mature	10	3	340					340	380	Good	Fair	High	2. Medium	A1	4.1	2.2	Trunk wound to 5m with relatively good response growth.
364	Forest Oak	*Allocasuarina torulosa*	Mature	11	4	400					400	490	Good	Fair	High	2. Medium	A2	4.8	2.5	Not marked on survey. Trunk wound to 5m with relatively good response growth. Vine cover.
365	Forest Oak	*Allocasuarina torulosa*	Mature	9	3	340					340	380	Good	Fair	High	2. Medium	A2	4.1	2.2	Not marked on survey. Trunk wound to 4m with relatively good response growth. Vine cover.
366	Red Mahogany	*Eucalyptus resinifera*	Mature	29	12	690					690	750	Good	Good	Very High	1. Long	AA1	8.3	2.9	None.
367	Smooth Barked Apple	*Angophora costata*	Veteran	25	10	930					930	1240	Poor	Fair	Very High	4. Remove	A4	11.2	3.6	Apical dieback with large diameter deadwood. Senescent stage of life with canopy retrenchment. Large trunk wound on South side from base to 8m. Possible ecological significance.
368	Forest Oak	*Allocasuarina torulosa*	Semi-mature	9	4	240					240	280	Good	Fair	Medium	2. Medium	A2	2.9	1.9	Not marked on survey. Vine cover.
369	Turpentine	*Syncarpia glomulifera*	Mature	14	5	490					490	660	Good	Fair	High	1. Long	A1	5.9	2.8	Not marked on survey. Trunk wound at base.
370	Forest Oak	*Allocasuarina torulosa*	Mature	14	4	410					410	470	Good	Good	High	1. Long	A1	4.9	2.4	Not marked on survey. Minor trunk wound.
371	Red Mahogany	*Eucalyptus resinifera*	Mature	16	6	690					690	750	Good	Fair	High	2. Medium	A1	8.3	2.9	Not marked on survey. Vine cover on trunk.
372	Cabbage Palm	*Livistona australis*	Mature	7	2	270					270	NA	Good	Good	High	1. Long	A1	3.0	NA	Not marked on survey.
373	Forest Oak	*Allocasuarina torulosa*	Semi-mature	9	3	330					330	380	Fair	Fair	Medium	2. Medium	Z10	4.0	2.2	Not marked on survey. Trunk wound. Asymmetric crown shape. Significant vine cover.
374	Red Mahogany	*Eucalyptus resinifera*	Mature	18	6	480					480	550	Fair	Good	High	2. Medium	A2	5.8	2.6	Not marked on survey. Low foliage density for species. Trunk fused at base with adjacent Turpentine.
375	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	2.5	330					330	350	Good	Fair	Medium	2. Medium	A2	4.0	2.1	Not marked on survey. Vine cover. Trunk fused at base with adjacent Eucalyptus.
376	Forest Oak	*Allocasuarina torulosa*	Semi-mature	11	2	280					280	320	Good	Fair	Medium	2. Medium	A2	3.4	2.1	Not marked on survey. Vine cover.
377	Forest Oak	*Allocasuarina torulosa*	Semi-mature	7	3	300					300	340	Good	Fair	Medium	2. Medium	Z10	3.6	2.1	Not marked on survey. Significant trunk lean with asymmetric crown shape.
378	Forest Oak	*Allocasuarina torulosa*	Semi-mature	14	3	280					280	320	Good	Fair	Medium	2. Medium	A1	3.4	2.1	Not marked on survey. Trunk wound from base to 6m.
379	Forest Oak	*Allocasuarina torulosa*	Semi-mature	10	2.5	270					270	350	Good	Fair	Medium	2. Medium	A1	3.2	2.1	Not marked on survey. Trunk wound from base to 3m.
380	Forest Oak	*Allocasuarina torulosa*	Mature	16	4	400					400	440	Good	Good	High	1. Long	A1	4.8	2.3	Not marked on survey.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
381	Forest Oak	*Allocasuarina torulosa*	Semi-mature	11	3	250					250	270	Good	Fair	Medium	2. Medium	A2	3.0	1.9	Not marked on survey. Vine cover.
382	Forest Oak	*Allocasuarina torulosa*	Semi-mature	12	3	300					300	340	Fair	Fair	Medium	3. Short	Z4	3.6	2.1	Not marked on survey. Apical dieback. Vine cover.
383	Forest Oak	*Allocasuarina torulosa*	Mature	13	4	360					360	400	Good	Fair	High	2. Medium	A1	4.3	2.3	Not marked on survey. Co-dominant stems at 3m with minor bark inclusion.
384	Forest Oak	*Allocasuarina torulosa*	Mature	15	5	410					410	460	Good	Good	High	1. Long	A1	4.9	2.4	Not marked on survey.
385	Bangalay	*Eucalyptus botryoides*	Mature	17	5	360					360	390	Good	Good	High	1. Long	A1	4.3	2.2	Minor vine cover.
386	Turpentine	*Syncarpia glomulifera*	Mature	14	5	440					440	590	Fair	Fair	High	2. Medium	A2	5.3	2.7	Significant vine cover suppressing canopy.
387	Red Mahogany	*Eucalyptus resinifera*	Mature	24	6	700					700	840	Good	Fair	High	2. Medium	A2	8.4	3.1	Not marked on survey. Significant vine cover suppressing canopy.
388	Forest Oak	*Allocasuarina torulosa*	Mature	14	4	420					420	530	Good	Fair	High	2. Medium	A2	5.0	2.5	Not marked on survey. Trunk wound. Vine cover.
389	Smooth Barked Apple	*Angophora costata*	Veteran	22	5	1250					1250	1340	Fair	Poor	Very High	4. Remove	AA4	15.0	3.7	Not marked on survey. Large and significant tree. Possible landscape remnant. Multiple hollows with yellow crested cockatoo using hollow. Possible ecological significance. Extent of decay through large primary branches unknown. Tree in senescent stage of life with canopy retrenchment and epicormic growth.
390	Turpentine	*Syncarpia glomulifera*	Mature	8	3	430					430	470	Good	Fair	Medium	2. Medium	Z10	5.2	2.4	Not marked on survey. Topped at 4-5m with epicormic growth.
391	Turpentine	*Syncarpia glomulifera*	Mature	13	5	500					500	660	Good	Good	High	1. Long	A1	6.0	2.8	Not marked on survey. Asymmetric crown shape.
392	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	17	6	800					800	870	Good	Fair	Very High	1. Long	A2	9.6	3.1	Not marked on survey. Vine cover.
393	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	18	9	1050					1050	1240	Good	Fair	Very High	1. Long	A2	12.6	3.6	Not marked on survey. Vine cover. Cavity at base with relatively good response growth adjacent to wound.
394	Bangalay	*Eucalyptus botryoides*	Semi-mature	9	3	260					260	310	Good	Fair	Medium	2. Medium	Z10	3.1	2.0	Not marked on survey. Trunk lean and asymmetric crown shape due to adjacent tree.
395	Forest Oak	*Allocasuarina torulosa*	Mature	15	3	300					300	370	Good	Fair	Medium	2. Medium	A2	3.6	2.2	Located within the adjoining property. Vine cover.
396	Forest Oak	*Allocasuarina torulosa*	Semi-mature	7	2	160	230				280	300	Good	Fair	Medium	2. Medium	A1	3.4	2.0	Not marked on survey. Suppressed by adjacent tree.
397	Smooth Barked Apple	*Angophora costata*	Mature	12	5	450					450	490	Good	Good	High	1. Long	A1	5.4	2.5	Not marked on survey.
398	Forest Oak	*Allocasuarina torulosa*	Semi-mature	8	3	230					230	270	Good	Fair	Medium	2. Medium	Z10	2.8	1.9	Not marked on survey. Suppressed by adjacent tree.
399	Forest Oak	*Allocasuarina torulosa*	Semi-mature	8	2	200					200	250	Good	Good	Medium	1. Long	A1	2.4	1.8	Not marked on survey.
400	Forest Oak	*Allocasuarina torulosa*	Semi-mature	7	2	200	150				250	340	Good	Fair	Medium	1. Long	A1	3.0	2.1	Not marked on survey.
401	Forest Oak	*Allocasuarina torulosa*	Semi-mature	7	2	210					210	250	Good	Good	Medium	1. Long	A1	2.5	1.8	Not marked on survey.
402	Smooth Barked Apple	*Angophora costata*	Mature	14	6	590					590	660	Fair	Fair	High	3. Short	Z4	7.1	2.8	Low foliage density for species. Previous failure of central stem. Cambium dieback with low response growth. Early stages of decline.
403	Smooth Barked Apple	*Angophora costata*	Mature	14	6	450					450	510	Fair	Fair	High	3. Short	Z4	5.4	2.5	Low foliage density for species with apical dieback. Cambium dieback near base, greater than 50% the circumference of the trunk at widest section. In decline.
404	Smooth Barked Apple	*Angophora costata*	Mature	14	5	560					560	600	Good	Good	High	1. Long	A1	6.7	2.7	None.
405	Eucalypt	*Eucalyptus spp*	Dead	11	5	570					570	630	Dead	Poor	High	4. Remove	ZZ4	6.8	2.7	Dead tree with epicormic growth at base.
406	Cabbage Palm	*Livistona australis*	Semi-mature	5	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey.
407	Cabbage Palm	*Livistona australis*	Mature	12	2	300					300	NA	Good	Good	High	1. Long	A1	3.0	NA	No access to trunk, no tag.
408	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	6	2	210	170	150			309	350	Good	Fair	Medium	2. Medium	A1	3.7	2.1	Not marked on survey. Three stems from base with relatively good form to unions. Asymmetric crown shape.
409	Cheese Tree	*Glochidion ferdinandi*	Mature	6	4	300	220	220			432	600	Good	Fair	Medium	2. Medium	A1	5.2	2.7	Not marked on survey. Three stems from base with relatively good form to unions. Asymmetric crown shape.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
410	Bangalay	*Eucalyptus botryoides*	Mature	13	7	510					510	570	Good	Fair	High	1. Long	A1	6.1	2.6	Asymmetric canopy to the south. DBH measured at 70cm above ground.
411	Smooth Barked Apple	*Angophora costata*	Mature	16	5	550					550	600	Good	Good	High	1. Long	A1	6.6	2.7	None.
412	Cabbage Palm	*Livistona australis*	Mature	9	1.5	250					250	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
413	Turpentine	*Syncarpia glomulifera*	Semi-mature	10	1	210					210	300	Good	Fair	Medium	1. Long	Z10	2.5	2.0	Suppressed by adjacent trees. Co-dominant included stems. Low LCR.
414	Eucalypt	*Eucalyptus spp*	Mature	15	3	410					410	470	Fair	Fair	Medium	3. Short	Z10	4.9	2.4	Central stem failure with epicormic regrowth.
415	Eucalypt	*Eucalyptus spp*	Dead	8	0.5	220					220	270	Dead	Poor	Low	4. Remove	ZZ4	2.6	1.9	Trunk remaining
416	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	17	5	440					440	508	Good	Good	High	1. Long	A1	5.3	2.5	Vine on trunk.
417	Bangalay	*Eucalyptus botryoides*	Mature	15	5	370					370	450	Good	Good	High	1. Long	A1	4.4	2.4	Asymmetric canopy with minor trunk lean.
418	Bangalay	*Eucalyptus botryoides*	Mature	17	5	410					410	450	Good	Good	High	1. Long	A1	4.9	2.4	None.
419	Eucalypt	*Eucalyptus spp*	Mature	17	5	470					470	520	Good	Good	High	1. Long	A1	5.6	2.5	None.
420	Cabbage Palm	*Livistona australis*	Mature	9	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
421	Cabbage Palm	*Livistona australis*	Mature	8	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
422	Cabbage Palm	*Livistona australis*	Mature	9	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
423	Rough Barked Apple	*Angophora floribunda*	Semi-mature	12	3	230					230	270	Fair	Fair	Medium	1. Long	A2	2.8	1.9	Vine on trunk and lower branches. Asymmetric canopy.
424	Eucalypt	*Eucalyptus spp*	Mature	15	4	470					470	510	Fair	Fair	Medium	3. Short	Z4	5.6	2.5	Early stages of decline with apical dieback.
425	Rough Barked Apple	*Angophora floribunda*	Mature	15	4	450					450	480	Good	Good	High	1. Long	A1	5.4	2.4	None.
426	Bangalay	*Eucalyptus botryoides*	Mature	20	7	590					590	650	Good	Good	High	1. Long	A1	7.1	2.8	None.
427	Rough Barked Apple	*Angophora floribunda*	Mature	17	5	420					420	450	Fair	Fair	High	2. Medium	A2	5.0	2.4	Significant vine cover.
428	Eucalypt	*Eucalyptus spp*	Dead	7	0.5	270	170				319	360	Dead	Poor	Low	4. Remove	ZZ4	3.8	2.2	Trunk remaining
429	Bangalay	*Eucalyptus botryoides*	Mature	20	6	860					860	900	Good	Fair	High	1. Long	A4	10.3	3.2	Large stem failure near base, with cavity and possible habitat hollow.
430	Rough Barked Apple	*Angophora floribunda*	Mature	14	5	310					310	340	Good	Fair	Medium	1. Long	Z10	3.7	2.1	Asymmetric canopy with significant trunk lean to the NW.
431	Rough Barked Apple	*Angophora floribunda*	Mature	15	4	330					330	370	Good	Good	Medium	1. Long	A1	4.0	2.2	None.
432	Bangalay	*Eucalyptus botryoides*	Mature	20	7	610					610	680	Good	Good	High	1. Long	A1	7.3	2.8	None.
433	Cabbage Palm	*Livistona australis*	Mature	10	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
434	Cabbage Palm	*Livistona australis*	Mature	11	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
435	Cabbage Palm	*Livistona australis*	Mature	10	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
436	Forest Oak	*Allocasuarina torulosa*	Mature	12	3	260					260	300	Good	Poor	Medium	4. Remove	Z5	3.1	2.0	Active split at main stem union.
437	Rough Barked Apple	*Angophora floribunda*	Semi-mature	13	2	240					240	280	Fair	Fair	Medium	2. Medium	Z10	2.9	1.9	Suppressed by adjacent trees. Low LCR.
438	Rough Barked Apple	*Angophora floribunda*	Mature	17	4	390					390	430	Good	Good	Medium	1. Long	A1	4.7	2.3	None.
439	Cabbage Palm	*Livistona australis*	Mature	10	1.5	270					270	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
440	Rough Barked Apple	*Angophora floribunda*	Mature	13	3	360					360	410	Fair	Fair	High	2. Medium	A2	4.3	2.3	Reduced foliage density for species.
441	Cabbage Palm	*Livistona australis*	Mature	10	1.5	270					270	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
442	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	300					300	NA	Good	Good	Medium	2. Medium	A1	2.5	NA	None.
443	Rough Barked Apple	*Angophora floribunda*	Mature	15	4	340					340	380	Fair	Good	Medium	3. Short	Z4	4.1	2.2	Low foliage density for species with selective dieback.
444	Cabbage Palm	*Livistona australis*	Mature	13	1.5	270					270	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
445	Eucalypt	*Eucalyptus spp*	Semi-mature	13	3	280					280	320	Fair	Fair	Medium	2. Medium	Z10	3.4	2.1	Asymmetric canopy with previous stem failure and decay.
446	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	7	3	180					180	250	Good	Fair	Low	5. Small/Young	Z1	2.2	1.8	None.
447	Rough Barked Apple	*Angophora floribunda*	Mature	20	7	550					550	620	Good	Good	High	1. Long	A1	6.6	2.7	None.
448	Rough Barked Apple	*Angophora floribunda*	Mature	13	4	400					400	450	Good	Good	High	1. Long	A1	4.8	2.4	None.
449	Rough Barked Apple	*Angophora floribunda*	Semi-mature	12	3	270					270	310	Good	Fair	Medium	1. Long	Z10	3.2	2.0	Very asymmetric canopy due to adjacent trees.
450	Camphor Laurel	*Cinnamomum camphora*	Mature	9	3	210	100	140	160		315	310	Good	Fair	Low	1. Long	Z3	3.8	2.0	Exempt species. Co-dominant included stems at base.
451	Coachwood	*Ceratopetalum apetalum*	Semi-mature	13	4	180	170	200			318	500	Good	Good	Medium	1. Long	A1	3.8	2.5	Group of three main trunks originating in similar location at ground. DAB estimated.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
452	Unknown species	*Unknown species*	Mature	18	5	210	410				461	500	Good	Fair	High	1. Long	A1	5.5	2.5	Co-dominant included stems at base.
453	Forest Oak	*Allocasuarina torulosa*	Mature	14	5	420					420	460	Good	Fair	High	1. Long	A1	5.0	2.4	Previous stem failure near base with wound. Moderate response growth.
454	Unknown species	*Unknown species*	Dead	8	1	380					380	410	Dead	Poor	Low	4. Remove	ZZ4	4.6	2.3	Dead tree.
455	Unknown species	*Unknown species*	Dead	7	0.5	280					280	310	Dead	Poor	Low	4. Remove	ZZ4	3.4	2.0	Dead trunk with vine cover.
456	Unknown species	*Unknown species*	Semi-mature	7	3	120	120				170	250	Good	Fair	Low	5. Small/Young	Z1	2.0	1.8	Co-dominant included stems at base.
457	Coachwood	*Ceratopetalum apetalum*	Semi-mature	8	3	240					240	270	Good	Good	Medium	1. Long	A1	2.9	1.9	None.
458	Eucalypt	*Eucalyptus spp*	Semi-mature	13	1	220					220	250	Good	Fair	Low	2. Medium	Z10	2.6	1.8	Suppressed by adjacent trees. Asymmetric crown with low LCR.
459	Coachwood	*Ceratopetalum apetalum*	Mature	12	4	130	320	150			377	450	Good	Fair	Medium	1. Long	A1	4.5	2.4	Not marked on survey.
460	Coachwood	*Ceratopetalum apetalum*	Young	7	1	140					140	170	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Not marked on survey.
461	Cabbage Palm	*Livistona australis*	Mature	12	1.5	310					310	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
462	Coachwood	*Ceratopetalum apetalum*	Semi-mature	10	3	190	120	150			270	400	Good	Good	Medium	1. Long	A1	3.2	2.3	None.
463	Cabbage Palm	*Livistona australis*	Mature	13	1.5	390					390	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
464	Coachwood	*Ceratopetalum apetalum*	Semi-mature	10	2	90	230				247	320	Good	Good	Medium	1. Long	A1	3.0	2.1	None.
465	Coachwood	*Ceratopetalum apetalum*	Mature	12	4	440					440	510	Good	Good	High	1. Long	A1	5.3	2.5	None.
466	Cabbage Palm	*Livistona australis*	Mature	12	1.5	410					410	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
467	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
468	Cabbage Palm	*Livistona australis*	Mature	9	1.5	280					280	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
469	Cabbage Palm	*Livistona australis*	Mature	12	1.5	340					340	NA	Good	Good	High	1. Long	A1	2.5	NA	None.
470	Turpentine	*Syncarpia glomulifera*	Mature	14	4	390					390	440	Good	Good	High	1. Long	A1	4.7	2.3	Not marked on survey.
471	Coachwood	*Ceratopetalum apetalum*	Mature	10	4	340					340	400	Good	Fair	Medium	1. Long	A1	4.1	2.3	None.
472	Bangalay	*Eucalyptus botryoides*	Mature	18	6	440					440	490	Good	Good	High	1. Long	A1	5.3	2.5	None.
473	Cabbage Palm	*Livistona australis*	Mature	10	1.5	310					310	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
474	Coachwood	*Ceratopetalum apetalum*	Semi-mature	10	2	220					220	250	Good	Good	Medium	1. Long	A1	2.6	1.8	None.
475	Coachwood	*Ceratopetalum apetalum*	Semi-mature	10	2	220					220	250	Good	Good	Medium	1. Long	A1	2.6	1.8	Not marked on survey.
476	Cabbage Palm	*Livistona australis*	Semi-mature	8	1.5	250	250				354	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey. Not tagged.
477	Coachwood	*Ceratopetalum apetalum*	Semi-mature	10	3	180	210				277	300	Good	Fair	Medium	1. Long	A1	3.3	2.0	Twin stemmed at base.
478	Forest Oak	*Allocasuarina torulosa*	Mature	12	3	290					290	320	Good	Good	Medium	1. Long	A1	3.5	2.1	None.
479	Turpentine	*Syncarpia glomulifera*	Semi-mature	12	3	300					300	340	Good	Good	Medium	1. Long	A1	3.6	2.1	Not marked on survey.
480	Coachwood	*Ceratopetalum apetalum*	Mature	12	4	150	160	220	90		323	550	Good	Fair	Medium	1. Long	A1	3.9	2.6	Not marked on survey. Co-dominant included stems at base
481	Bangalay	*Eucalyptus botryoides*	Mature	17	5	640					640	700	Good	Good	High	1. Long	A1	7.7	2.8	None.
482	Unknown species	*Unknown species*	Mature	10	3	210	270				342	400	Poor	Poor	Low	4. Remove	Z4	4.1	2.3	Less than 10% live foliage with significant vine cover. Decay on stems.
483	Cabbage Palm	*Livistona australis*	Mature	10	1.5	310					310	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Tree not tagged due to access.
484	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	270					270	NA	Good	Good	Medium	1. Long	A1	2.5	NA	None.
485	Coachwood	*Ceratopetalum apetalum*	Mature	12	3	270					270	320	Good	Good	Medium	1. Long	A1	3.2	2.1	None.
486	Swamp Mahogany	*Eucalyptus robusta*	Mature	15	5	430					430	490	Good	Good	High	1. Long	A1	5.2	2.5	None.
487	Black She Oak	*Allocasuarina littoralis*	Dead	5	0.1	350					350	400	Dead	Poor	Low	4. Remove	ZZ4	4.2	2.3	Trunk remaining
488	Broad-leaved White Mahogany	*Eucalyptus umbra*	Mature	14	4	410					410	470	Fair	Good	High	2. Medium	A2	4.9	2.4	Apical dieback with epicormic growth.
489	Cabbage Palm	*Livistona australis*	Mature	8	1.5	290					290	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey.
490	Unknown species	*Unknown species*	Dead	7	0.2	320					320	370	Dead	Poor	Medium	4. Remove	ZZ4	3.8	2.2	Trunk with vine cover.
491	Rough Barked Apple	*Angophora floribunda*	Mature	20	7	610					610	680	Good	Good	High	1. Long	A1	7.3	2.8	None.
492	Rough Barked Apple	*Angophora floribunda*	Dead	10	0.5	340					340	420	Dead	Poor	Medium	4. Remove	ZZ4	4.1	2.3	Trunk with vine cover.
493	Unknown species	*Unknown species*	Dead	8	0.2	300					300	340	Dead	Poor	Medium	4. Remove	ZZ4	3.6	2.1	Not marked on survey. Trunk with vine cover.
494	Bangalay	*Eucalyptus botryoides*	Mature	20	9	690					690	780	Good	Good	High	1. Long	A1	8.3	3.0	Vine cover on trunk

Appendix 2 - Tree Inspection Schedule

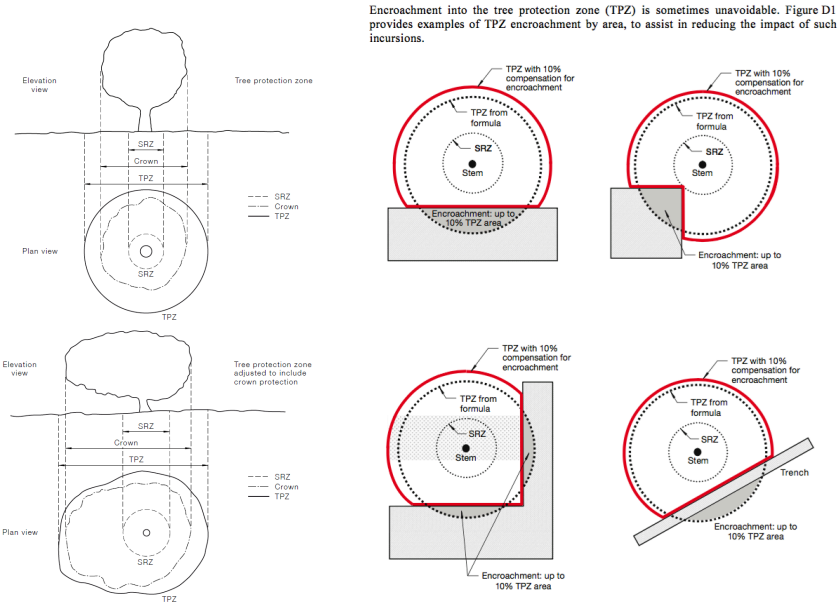
Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
495	Bangalay	*Eucalyptus botryoides*	Mature	23	5	450					450	520	Good	Good	High	1. Long	A1	5.4	2.5	Vine cover on trunk.
496	Rough Barked Apple	*Angophora floribunda*	Mature	16	5	410					410	440	Good	Good	High	1. Long	A2	4.9	2.3	Vine cover on trunk and lower branches
497	Rough Barked Apple	*Angophora floribunda*	Mature	16	6	490					490	540	Fair	Good	High	2. Medium	A2	5.9	2.6	Low foliage density for species, with apical dieback. Likely associated with soil fill on one side of root plate.
G1	Cabbage Palm	*Livistona australis*	Semi-mature	7	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey. Group of approximately 9 Palms with heights between 5-7m. Trees not tagged.
G2	Cabbage Palm	*Livistona australis*	Mature	10	1.5	300					300	NA	Good	Good	Medium	1. Long	A1	2.5	NA	Not marked on survey. Group of approximately 15 palms along creek line located between tree 157 and 166. Trees not tagged.

Explanatory Notes

Tree Species - Where species is unknown it is indicated with an *'spp'*.
Age Class - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y).
Diameter at Breast Height (DBH) - Measured with a DBH tape or estimated at approximately 1.4m above ground level.
Diameter Above root Buttresses (DAB): Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.
Height - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.
Spread - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.
Tree Protection Zone (TPZ) - DBH x 12. Measured in radius from the centre of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 metre outside the crown projection.
Structural Root Zone (SRZ) - $(DAB \times 50)^{0.42} \times 0.64$. Measured in radius from the centre of the trunk. Rounded up to nearest 0.1m.
Health - Good/Fair/Poor/Dead
Structure - Good/Fair/Poor
Safe Useful Life Expectancy (SULE) - 1. Long (40+years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.
Amenity Value - Very High/High/Medium/Low/Very Low.
Retention Value: Tree AZ, see appendix 3 for categories.

Appendix 3 - Further Information of Methodology

1. **Tree Protection Zone:** The tree protection zone (TPZ) is the principle means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The radius of the TPZ is calculated for each tree by multiplying its DBH x 12. The derived value is measured in radius from the centre of the stem/trunk at ground level. A TPZ should not be less than 2.0 metres nor greater than 15 metres (except where crown protection is required).
It is commonly observed that tree roots will extend significant further than the indicative TPZ, however the TPZ is an area identified AS4970-2009 to be extent where root loss or disturbance will generally not impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The tree protection also incorporates the SRZ (see below for more information about the SRZ). I have calculated the TPZ of palms, other monocots, cycads and tree ferns at one metre outside the crown projection. See appendices for additional information about the TPZ including information about calculating the TPZ and examples of TPZ encroachment.
Minor encroachment into TPZ: Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.
Major encroachment into TPZ: Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted.



2. **Structural Root Zone:** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always need to be maintained to preserve a viable tree as it will only have a minor effect on the trees vigour and health. There are several factors that determine the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally work within the SRZ should be avoided.
An indicative SRZ radius can be determined from the diameter of the trunk measured immediately above the root buttresses. Root investigation could provide more information about the extent of the SRZ. The following formula should be used to calculate the SRZ.
SRZ radius = $(D \times 50)^{0.42} \times 0.64$ (D = Diameter above root buttress).

3. **Tree Age Class:** If can be difficult to determine the age of a tree without carrying out invasive tests that may damage the tree, so we have categorised there likely age class which is defined below;
    - Young/Newly planted: Young or recently planted tree.
    - Semi Mature: Up to 20% of the usual life expectancy for the species.
    - Early mature/Mature: Between 20%-80% of the usual life expectancy for the species.
    - Over mature: Over 80% of the usual life expectancy for the species.
    - Dead: Tree is dead or almost dead.

4. **Health/Physiological Condition:** Below are examples conditions used when assigning a category for tree health.

Category	Example condition	Summary
Good	• Crown has good foliage density for species. • Tree shows no or minimal signs of pathogens that are unlikely to have an effect on the health of the tree. • Tree is displaying good vigour and reactive growth development.	• The tree is in above average health and condition and no remedial works are required.
Fair	• The tree may be starting to dieback or have over 25% deadwood. • Tree may have slightly reduced crown density or thinning. • There may be some discolouration of foliage. • Average reactive growth development. • There may be early signs of pathogens which may further deteriorate the health of the tree. • There may be epicormic growth indicating increased levels of stress within the tree.	• The tree is in below average health and condition and may require remedial works to improve the trees health.
Poor	• The may be in decline, have extensive dieback or have over 30% deadwood. • The canopy may be sparse or the leaves may be unusually small for species. • Pathogens or pests are having a significant detrimental effect on the tree health.	• The tree is displaying low levels of health and removal or remedial works may be required.
Dead	• The tree is dead or almost dead.	• The tree should generally be removed.

5. **Structural Condition:** Below are examples conditions used when assigning a category for structural condition.

Category	Example condition	Summary
Good	• Branch unions appear to be strong with no sign of defects. • There are no significant cavities. • The tree is unlikely to fail in usual conditions. • The tree has a balanced crown shape and form.	• The tree is considered structurally good with well developed form.
Fair	• The tree may have minor structural defects within the structure of the crown that could potentially develop into more significant defects. • The tree may a cavity that is currently unlikely to fail but may deteriorate in the future. • The tree is an unbalanced shape or leans significantly. • The tree may have minor damage to its roots. • The root plate may have moved in the past but the tree has now compensated for this. • Branches may be rubbing or crossing.	• The identified defects are unlikely cause major failure. • Some branch failure may occur in usual conditions. • Remedial works can be undertaken to alleviate potential defects.
Poor	• The tree has significant structural defects. • Branch unions may be poor or weak. • The tree may have a cavity or cavities with excessive levels of decay that could cause catastrophic failure. • The tree may have root damage or is displaying signs of recent movement. • The tree crown may have poor weight distribution which could cause failure.	• The identified defects are likely to cause either partial or whole failure of the tree.

6. **Amenity Value:** To determine the amenity value of a tree we assess a number of different factors, which include but are not limited to the information below.
   - The visibility of the tree to adjacent sites.
   - The relationship between the tree and the site.
   - Whether the tree is protected by any statuary conditions.
   - The habitat value of the tree.
   - Whether the tree is considered a noxious weed species.

   The amenity value is rated using one of the following values.
   - Very High
   - High
   - Moderate
   - Low
   - Very Low

7. **Safe Useful Life Expectancy (SULE), (Barrel, 2001):** A trees safe useful life expectancy is determined by assessing a number of different factors including the health and vitality, estimated age in relation to expected life expectancy for the species, structural defects, and remedial works that could allow retention in the existing situation.

Category	Description
1. Long - Over 40 years	(a) Structurally sound trees located in positions that can accommodate future growth. (b) Trees that could be made suitable for retention in the long term by remedial tree care. (c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.
2. Medium - 15 to 40 years	(a) Trees that may only live between 15 and 40 more years. (b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that could be made suitable for retention in the medium term by remedial tree care.
3. Short - 5 to 15 years	(a) Trees that may only live between 5 and 15 more years. (b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.
4. Remove - Under 5 years	(a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions. (b) Dangerous trees because of instability or recent loss of adjacent trees. (c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form. (d) Damaged trees that are clearly not safe to retain. (e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (f) Trees that are damaging or may cause damage to existing structures within 5 years. (g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f). (h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.
5. Small/Young	(a) Small trees less than 5m in height. (b) Young trees less than 15 years old but over 5m in height. (c) Formal hedges and trees intended for regular pruning to artificially control growth.

8. **Root investigations:** The root investigations should identify roots greater than 30mm in diameter that are located along the edge of the structures footprint or in the location of footings. Root investigations must be carried out using non-invasive methods (manual excavations). Any excavations for the root investigations must carried out manually to avoid damaging the roots during excavations. Manual excavation may include the use of a high-pressure air/air knife, or a combination of high-pressure water and a vacuum device. When hand excavating carefully work around roots retaining as many as possible. Take care to not fray, wound, or cause damage to any roots during excavations as this may cause decay or infection from pathogens. It is essential that exposed roots are kept moist and the excavation back filled as soon as possible. The root investigations should be carried out by a qualified Arborist minimum AQF3. Once roots are exposed, a visual assessment can be carried out by a consulting Arborist to evaluate the potential impact of the proposed root loss on the health and stability of the tree. A root map/report should be prepared identifying the findings of investigations, including photographs as supporting evidence in the report.

9. **Retention Value:** The system I have used to award the retention value is Tree AZ. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The table below provides a brief description of each category.

TreeAZ Categories (Version 10.04-ANZ)

CAUTION: TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure	
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people	
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

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Glossary of Terms

Abiotic - Pertaining to non-living agents; e.g. environmental factors

Adventitious shoots - Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage - The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Bark - A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Branch:
• **Primary**. A first order branch arising from a stem
• **Lateral**. A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
• **Sub-lateral**. A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Branch collar - A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

Brown-rot - A type of wood decay in which cellulose is degraded, while lignin is only modified

Buckling - An irreversible deformation of a structure subjected to a bending load

Buttress zone - The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

Cambium - Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Canker - A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

Compartmentalisation - The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compressive loading - Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition - An indication of the physiological condition of the tree. Where the term ‘condition’ is used in a report, it should not be taken as an indication of the stability of the tree

Crown/Canopy - The main foliage bearing section of the tree

Crown lifting - The removal of limbs and small branches to a specified height above ground level

Crown thinning - The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

Crown reduction/shaping - A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

DAB (Diameter Above Buttress) - Trunk diameter measured above the root buttress

Defect - In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Dieback - The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease - A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Dominance - In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

Dormant bud - An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction - In woody tissues, the loss of physiological function, especially water conduction, in sapwood

DBH (Diameter at Breast Height) - Stem diameter measured at a height of 1.4 metres or the nearest measurable point. Where measurement at a height of 1.4 metres is not possible, another height may be specified

Deadwood - Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

Epicormic shoot - A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Flush-cut - A pruning cut which removes part of the branch bark ridge and or branch-collar

Girdling root - A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

Habit - The overall growth characteristics, shape of the tree and branch structure

Hazard beam - An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

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Heartwood/false-heartwood - The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

Heave - A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

Included bark (ingrown bark) - Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

Lever arm - A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

Lignin - The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

Lions tailing - A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end- loading

Loading - A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Mycelium - The body of a fungus, consisting of branched filaments (hyphae)

Occlusion - The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen - A micro-organism which causes disease in another organism

Photosynthesis - The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products

Probability - A statistical measure of the likelihood that a particular event might occur

Pruning - The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Radial - In the plane or direction of the radius of a circular object such as a tree stem

Reactive Growth/Reaction Wood - Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Ring-barking - The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

Root-collar - The transitional area between the stem/s and roots

Sapwood - Living xylem tissues

Soft-rot - A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Stem/s - Principle above-ground structural component(s) of a tree that supports its branches

Stress - In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

SRZ (Structural Root Zone) - The area around the base of the tree required for the trees stability in the ground

Subsidence - In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

Taper - In stems and branches, the degree of change in girth along a given length

Targets - In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

Topping - In arboriculture, the removal of the crown of a tree, or of a major proportion of it

Transpiration - The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

TPZ (Tree Protection Zone) - A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development

Understory - This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

Veteran tree - Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem

Vigour - The expression of carbohydrate expenditure to growth (in trees)

White-rot - A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

Wind exposure - The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

Wind pressure - The force exerted by a wind on a particular object

Windthrow - The blowing over of a tree at its roots

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London