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Arborist Impact Assessment

Proposed upgrades and realignment of Sewer Services along Brolga Way, Hue Hue Road, and Alison Road in Wyong NSW



Prepared for: Ampol Australia Petroleum Pty Ltd

c/- Mostyn Copper

November 2024

AEP Ref: 2634.03

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Document Control

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Client Name	Ampol Australia Petroleum Pty Ltd
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Revision	Date	Author	Reviewed	Approved
00	21/12/2023	Kieran Giffen Eamon McEntee Mark Stute	Warwick Muir	Simon Purcell
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Distribution

Revision	Date	Name	Organisation
00	21/12/2023	Ben Jeavons-Fellows	Mostyn Copper
01	07/11/2024	Ben Jeavons-Fellows	Mostyn Copper

Disclaimer

Direct observations are relevant only to the trees identified within this report. This report utilizes a rapid assessment of tree health and condition to inform retention value. This assessment of tree health and condition is based on non-destructive visual observations from ground level. Thus, it is not possible to identify all structural faults at high levels in the tree, internal structural faults or within the root system. Observations about Tree Health, Structure, Safe Useful Life Expectancy (SULE) and other characteristics have been made at the time of assessment and these characteristics may change over time due to natural growth of the tree as a living organism or due to unforeseen events. As such the observations that are supplied within are relevant for a period of 12 months from the time of assessment, after which re-assessment may be required for the trees assessed within this report. The recommendations and methodologies for Tree Protection within this report are relevant only to the Trees assessed within this report. The author is not responsible for tree damage related to failure to apply these recommendations or methodologies for Tree Protection in full within this report or for tree damage relating to works conducted by an unaffiliated person. No responsibility for damage to persons or property is accepted for damage by trees referred to within this report.

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1.0 Introduction

1.1 Background

At the request of the Ampol Australia Petroleum Pty Ltd c/- Mostyn Copper (the client), Anderson Environment & Planning (AEP) have prepared an Arborist Impact Assessment and Tree Protection Plan to address the potential arboricultural impacts from the proposed upgrades and realignment of sewer services along several main roads in Wyong (the Proposal). The linear area proposed for the alignment spans 4.5kms from Northwest to Southeast. Starting at Lot 41/-/DP814963, it follows the road reserve along the north side of Brolga Way, east side of Hue Hue Road, and north side of Alison Way.

This report considers the Ecological Assessment Report (EAR) undertaken for this development (AEP 2023 Unpublished).

1.2 Objectives

Further to the above the following objectives for this report have been assigned:

- Tree identification plan and schedule identifying tree species, size, canopy spread and other dimensions;
- Assessment of all trees assessed to have potential impacts within the Subject Site, including, but not limited to, the health and vigour of the trees, structural integrity, life expectancy, retention value and landscape significance;
- Likely impact the proposed development will have on assessed trees, including TPZ and SRZ encroachments.

2.0 Site Description and Locality

Table 1 provide the site details for the Subject Site.

Table 1: Site Particulars

Detail	Comments
Client	Ampol Australia Petroleum Pty Ltd c/- Mostyn Copper
Address	Brolga Way, Hue Hue Road, and Alison Road
Title(s)	The land proposed for development is located as part of proposed upgrades and realignment of sewer services along several main roads in Wyong. The linear area proposed for the alignment spans 4.5kms from Northwest to Southeast, beginning at Lot 41, DP814963; following Brolga Way, Hue Hue Road and Alison Road.
Subject Site	The linear area proposed for the alignment spans approx. 4.5kms from Northwest to Southeast, beginning at Lot 41, DP814963; following Brolga Way, Hue Hue Road and Alison Road.
LGA	Central Coast Council
Zoning	Under the <i>Central Coast Local Environmental Plan 2022</i> (the LEP), Lot 41/-/DP814963 is zoned: SP2 – Infrastructure; (pub. 21-7-2023).
Current Land Use	The site is a linear area that occupies a stretch of road reserve of approximately 4.5km along Brolga Way, Hue Hue Road and Alison Road in the Wyong area. Lot 41, DP814963, at the northern end of the alignment, is a service centre and associated infrastructure.

Detail	Comments
Surrounding Land Use	Surrounding areas are diverse due to the length of the site, with land uses including a mix of rural enterprise, private recreation areas, golf course and permanent residential dwellings. Surrounding lands have a variety of zoning, including RU1 – Primary Production, C2 - Environmental Conservation, C3 – Environmental Management, and RE1 – Public Recreation.
Soil	The Subject site falls on the Patonga Claystone of the Central Coast Lowlands. Soil Landscape is characterised by dark brown fine sandy loam with weak to moderate sub-angular blocky structure and rough ped fabric, this occurs within the topsoil. (eSpade, 2023).

3.0 Proposed Development

It is proposed to realign and upgrade the sewer services along several main roads in Wyong.

Figure 1 depicts the extent of the Subject Site overlain on an aerial photograph of the locality.

Figure 2 shows a concept plan for the proposed development.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Subject Site
-  Cadastre



AEP

Figure 1 - Site Location

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong Suburb, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

LEGEND

BENCH MARK	▲
TELSTRA PIT	TEL
COMMS PIT	COM
OPTUS PIT	OP
TELSTRA PILLAR	TP
ELECTRIC LIGHT POLE	ELP
ELECTRIC LIGHT BOLLARD	LB
ELECTRICITY PIT	EPIT
ELECTRICITY BOX	EL
POWER POLE	PP
DOWNSPIPE	DP
DOWNSPIPE	DP
GRATED INLET PIT	GIP
KERB INLET PIT	KIP
DRAINAGE PIT	DP
GRATED DRAIN	
SEWER INSPECTION POINT	SIP
SEWER VENT	SEV
SEWER MANHOLE	SMH
STOP VALVE	SV
HYDRANT	HYD
WATER METER	WM
WATER TAP	TAP
WATER VALVE	WV
GAS VALVE	GAS
GAS METER	GM
SERVICE PIT	PIT
PIT WITH CONCRETE LID	CLID
PIT WITH METAL LID	MLID
TRAFFIC LIGHT	TL
ROADS & MARITIME SERVICES	RMS
STREET SIGN	SS
BOLLARD	BOL
GATE	
VEHICLE CROSSING	(VC)
PRAM CROSSING	(PC)
WINDOW	W
DOOR	D
HEAD/SILL	H/S
COMMUNICATIONS (DBYD)	C
ELECTRICITY (U'GROUND DBYD)	E
ELECTRICITY (OVERHEAD)	P
SEWER (DBYD)	S
WATER (DBYD)	W
GAS (DBYD)	G
ROADS & MARITIME (DBYD)	R
GAS (DETECTED)	G(D)
COMMUNICATIONS (DETECTED)	C(D)
WATER (DETECTED)	W(D)
STORMWATER (DETECTED)	SW(D)
SEWER (DETECTED)	S(D)
ELECTRICITY (DETECTED)	E(D)
UNKNOWN SERVICE (DETECTED)	U(D)

- NOTES
1. THE BOUNDARIES HAVE NOT BEEN MARKED ON GROUND

2. BOUNDARIES WITHIN THIS FILE HAVE BEEN ADDED FROM DCDB DATA OBTAINED FROM NSW LAND REGISTRY SERVICES AND ARE APPROXIMATE ONLY

3. ORIGIN OF MGA2020 COORDINATES IS TAKEN FROM PM 82175 - E:351451.830, N:6317221.766 IN HUE HUE ROAD (17/11/2023)

4. ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM PM 82175 R.L. 31.136 (A.H.D.) IN HUE HUE ROAD

5. CONTOUR INTERVAL 0.5 m

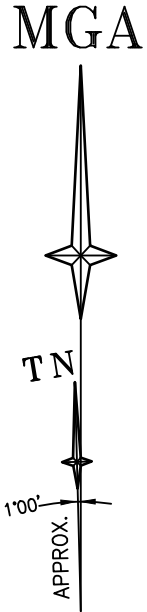
6. CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION

7. KERB LEVELS ARE TO THE TOP OF KERB UNLESS SHOWN OTHERWISE

8. AN INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE OVER SEWER RISING MAIN & ALL SERVICES IN CLOSE VICINITY. UNDERGROUND SERVICES HAVE BEEN DETECTED BY "DOWN UNDER DETECTION SERVICES" AND ARE APPROXIMATE ONLY. SOME SERVICES SUCH AS FIRE&WATER SUPPLY, GAS AND OPTICAL FIBRE CABLING DO NOT HAVE METALLIC TRACING WIRES OR METAL PIPES AND MAY NOT HAVE BEEN DETECTED. SERVICES HAVE ALSO BEEN PLOTTED FROM RELEVANT AUTHORITIES RECORDS AS SUPPLIED BY BEFORE YOU DIG AUSTRALIA.

9. 8/4/7 DENOTES TREE SPREAD OF 8m, TRUNK DIAMETER OF 0.4m & APPROX HEIGHT OF 7m

10. BEARINGS SHOWN ARE MGA (MAP GRID OF AUSTRALIA) ADD APPROX. 1°00' FOR TRUE NORTH



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SCALE 1:5000 @ A1

H	00/00/00	—	00	D	00/00/00	—	00
G	00/00/00	—	00	C	00/00/00	—	00
F	00/00/00	—	00	B	00/00/00	—	00
E	00/00/00	—	00	A	00/00/00	—	00
Revision	Date	Description	Reference	Revision	Date	Description	Reference

CONFIDENCE TOGETHER

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THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

.....

Registered Surveyor NSW

Client AMPOL AUSTRALIA PETROLEUM PTY LTD

Drawing title PLAN OF DETAIL AND LEVELS OVER HUE HUE ROAD & ALISON ROAD, JILLIBY

datum AHD

site Area N/A

LGA CENTRAL COAST

reference number 52160 001DT

scale 1:5000 @A1

date of survey 17/11/2023

SHEET 28 OF 28

1

Figure 1: Subject Site Location

Figure 2: Proposed Concept Plan

4.0 Methodology

The arborist site survey was undertaken on 14th, 15th and 18th December 2023. Each tree observed within the Subject Site was assigned a unique tree number. Tree species were identified based on guidance from regional identification guides (Fairley and Moore 1989, Robinson 2003), and descriptions and records provided by the Royal Botanic Gardens (Plantnet 2023).

4.1 Visual Tree Assessment

A visual tree assessment to evaluate the health and condition of these trees in relation to the impacts of the proposed development was undertaken from ground level following the methodology described by Mattheck and Breloer (1994). Tree height was estimated following the guidance outlined in the Private Native Forestry Code of Practice (DECC 2007) and confirmed with a laser range finder. The Diameter at Breast Height (DBH) and Diameter Above Buttress (DAB) was determined using a DBH tape and methods of calculation for the Structural Root Zone (SRZ) and Tree Protection Zone (TPZ) applied as outlined in Australian Standard 4970-2009 *Protection of trees on development Sites* (AS 4970 – 2009) (Standards Australia 2009). Tree Total Canopy Area was estimated from the formula $\pi \times (\text{average canopy spread})^2$.

4.2 Tree Retention Value

To determine tree Retention Value a Landscape Significance Rating (LSR) was assigned to each tree. The LSR value provides consideration of the tree's amenity, environmental and heritage values (refer **Appendix B**). Trees are then assigned one of the following LSR categories:

- Significant (1);
- Very High (2);
- High (3);
- Moderate (4);
- Low (5);
- Very Low (6); and
- Insignificant (7).

Once the landscape significance value has been determined the following assessment matrix that utilises estimated life expectancy and landscape significance (**Table 2**) was applied to each tree.

Table 2: Tree Retention Status Matrix Assessment matrix adopted from Morton (2006).

Landscape significance rating							
Estimated Life Expectancy	1	2	3	4	5	6	7
Greater than 40 Years	High						
15 to 40 Years				Moderate			
5 to 15 Years				Low			
Less than 5 Years					Very low		
Dead or Hazardous							

4.3 Limitations

This report utilises a rapid assessment of tree health and condition to inform retention value. Should a detailed assessment of tree structural health and condition be required a tree risk assessment report should be commissioned.

This assessment of tree health and condition is based on non-destructive visual observations from ground level. Thus, it is not possible to identify all structural faults at high levels in the tree, internal structural faults or within the root system. Should a detailed assessment for structural faults be required a tree risk assessment report should be commissioned.

Weather conditions such as extreme wind, storm activity, lightning as well as other events or disturbances independent of the proposed activities are unpredictable. Unforeseeable damage to trees may occur as a result of unpredictable or unplanned weather events or disturbances.

Tree identifications are based on identifying features (fruit, inflorescence, etc.) found during December and made at ground level from within the Subject Site.

The total canopy area for each tree utilised within this report is an estimation based on field observation of canopy spread and the true amount of canopy area may differ.

Tree identified within by this plan are located to GPS accuracy and there may be some minor discrepancy in the true location.

Impact assessment was based to limited concept design confined to identification of the approximate proposal footprint at the time of preparation of this report. Variation of this concept design will alter some of the recommendations and this report should be updated to reflect these changes.

5.0 Tree Assessment Results

A total of 211 trees and two (2) stands identified within the Study Area and neighbouring properties were assessed. Observations were made for each assessed tree (**Appendix B**). Tree and stand locations are shown in **Appendix A - Figures 3 to 17**.

5.1 Summary of Tree Condition and Characteristics

A total of 211 trees and two (2) stands were assessed within close proximity of the Subject Site.

A total of 171 trees assessed within the site are native species, with 41 being non-native. The condition of the assessed trees includes (17) in poor or dead condition, (32) in fair condition, (161) in good condition and one (1) in exceptional condition.

Notable Trees within this grouping that are in poor or dead Structural and Health Condition including the following:

- Tree 9 – *Eucalyptus fibrosa* (Broad-leaved Ironbark) is a suppressed tree with co-dominant leaders, evidence of previous failures and pruning history resulting in poor health. There is dieback, epicormic growth, with the tree suffering from low vigour;
- Tree 35 – *Pinus radiata* (Monterey Pine) has deadwood, evidence of dieback and thinning crown. This tree has very low landscape significance rating (LSR) and a very low retention value;
- Tree 80 – *Corymbia maculata* (Spotted Gum) has poor structural and health condition. This tree has evidence of a previous failure in the top of the stem/canopy. The species foliage is limited to epicormic regrowth. This tree has moderate landscape significance rating (LSR) and moderate retention value;
- Tree 86 – *Corymbia maculata* (Spotted Gum) has poor structural and health condition. This tree has a twisted trunk/form with dead branches and pruning history resulting in health. The tree is suppressed and there is evidence of insect attack/damage. This tree has a moderate landscape significance rating (LSR) and low retention value;
- Tree 101 – *Acacia irrorata* (Green Wattle) has fair structural and poor health condition. The tree has co-dominant leaders, dead branches and deadwood. Sparse crown and photosynthetic area are notable and there is evidence of insect attack/damage. This tree has a low landscape significance rating (LSR) and low retention value;
- Tree 124 – *Pinus radiata* (Monterey Pine) has fair structural and poor health condition. The tree has notable dead branches, thinning and sparse crown. The tree has low vigour and photosynthetic area. This tree has a very low landscape significance rating (LSR) and very low retention value;
- Tree 140 – *Cinnamomum camphora* (Camphor Laurel) has a poor structural and health condition with epicormic growth. There is evidence of pruning history resulting in health, previous failures and subsiding branches. This tree has a very low retention value;
- Tree 218 – *Eucalyptus robusta* (Swamp Mahogany) has dead branches, deadwood (%) and epicormic growth. The tree has dieback, sparse crown and photosynthetic area. The tree has an estimated life expectancy of (<5 years); and
- Trees 10, 47, 73, 122, 147, 196, 201, 213 and 215 were identified as deceased with no live canopy observed at the time of assessment.

5.2 Summary of Landscape Significance and Retention Value

The following landscape significance ratings (LSRs) have been applied to the assessed trees;

- Six (6) 'Very High' These trees have a very large live crown size exceeding 200m²; and as a representative of the original vegetation of the area;
- 100 'High', due to their canopy size and good health and as representatives of the original vegetation of the area;
- 62 'Moderate' due to their canopy size and higher visibility as exotic or native cultivar status;
- 10 'Low' as exotic shrub species of low visibility or amenity value; and
- 33 'Very Low' due to being either dead, exotic or weed species with low ecological value.

With consideration of the estimated life expectancy for each tree, Retention Values (Retention Value) were assigned to each tree within the site. This identified the following;

- 81 'High',
- 84 'Moderate';
- 26 'Low'; and
- 20 'Very low' Retention Value Trees.

One tree (Tree 147) was observed to have small hollows present. No large stick nests were noted in the assessed trees.

6.0 Tree Impact Assessment

The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) are indicative areas critical for maintaining a tree's viability and stability respectively, holding the majority of the roots necessary for each function. Any ground works within these zones is likely to impact the viability or stability of the tree by injuring the root system.

6.1 Proposal Impacts

A impact assessment was made for each assessed tree (**Appendix B**). Tree and stand impacts are shown in **Appendix A - Figures 18 to 32**.

Upon review of the supplied proposal footprint, 16 trees have been assessed to have potential encroachment into the SRZ by the broader trenching works, including:

- Four (4) High Retention Value (Trees 3, 102, 110, 111); and
- Five (5) Moderate Retention Value (Trees 4, 5, 6, 7, 103); and
- Seven (7) Low Retention Value (Trees 52i, 54, 129, 130, 131, 132, 133).

These trees can only be retained with the current design if the following construction methodologies are undertaken;

- Ground protection measures should be installed on all areas of the TPZ of the affected tree outside of the direct trench footprint, implemented following guidance in Australian standard AS 4970 – 2009 *Protection of trees on development Sites* (**Appendix E**);
- The use of “soft” construction methods including manual and vacuum removal of soils is required for works conducted within the SRZ of these trees; and
- These works within the SRZ should only be conducted under supervision of the project arborist.

If the above tree protection measures are not undertaken, impacts are unlikely to be mitigated and tree stability and viability cannot be guaranteed, and removal of these trees may be required.

Upon review of the supplied proposal footprint, 12 trees have been assessed to have potential major (>10%) Encroachment into the TPZ, by the trenching works, including:

- Six (6) High Retention Value (Trees 1, 50, 53, 56, 112); and
- Two (2) Moderate Retention Value (Trees 55, 57); and
- Four (4) Low Retention Value (Trees 101, 137, 141, 142).

These trees can be retained with the current design if the following construction methodologies are undertaken;

- Ground protection measures should be installed on all areas of the TPZ of the affected tree outside of the direct trench footprint, implemented following guidance in Australian standard AS 4970 – 2009 *Protection of trees on development Sites* (**Appendix E**);
- The use of “soft” construction methods including manual and vacuum removal of soils may be required for works conducted within the TPZ of these trees; and
- These works within the TPZ should be conducted under supervision of the project arborist.

Upon review of the supplied proposal footprint, 145 trees have the potential to have minimal impacts by the design, provided that the proposed pipeline is under-bored by directional drilling, including:

- 61 High Retention Value (Trees 11, 23, 28, 32, 33, 34, 38, 39, 40, 42, 43, 44, 45, 48, 66, 69, 70, 71, 72, 75, 76, 78, 81, 82, 83, 84, 104, 105, 106, 107, 108, 119, 121, 127, 146, 149, 150,

153, 154, 157, 158, 159, 161, 163, 165, 166, 172, 174, 176, 180, 188, 190, 191, 194, 195, 208, 216, 220, 221, 222, 223); and

- 55 Moderate Retention Value (Trees 12, 13, 14, 15, 16, 18, 19, 20, 24, 25, 27, 29, 36, 37, 67, 68, 74, 77, 79, 80, 82i, 87, 88, 109, 116, 117, 151, 152, 156, 162, 164, 167, 168, 169, 175, 177, 178, 179, 181, 192, 193, 197, 198, 202, 203, 204, 205, 206, 209, 210, 211, 212, 214, 217, 219, 208, 216, 220, 221, 222, 223); and
- 12 Low Retention Value (Trees 8, 9, 17, 21, 86, 113, 118, 120, 123, 125, 126, 224), and
- 17 Very Low Retention Value (Trees 10, 26, 30, 31, 35, 41, 46, 47, 73, 122, 124, 147, 148, 196, 213, 215, 218).

These trees can be retained with the current design if the following construction methodologies are undertaken;

- Under-boring by directional drilling at a minimum design depth of 0.8m below ground level, with entry and exit pits for the under-bore located outside of the TPZ. This method is considered to be of minimal impact to these trees.

Additional under-boring areas have been identified and provided to the engineering team to further mitigate tree impacts.

Upon review of the supplied proposal footprint, 38 trees have the potential to have Minimal Impacts (<10% into the TPZ) by the trenching works, being a sufficient distance away from the development footprint to be retained without specific tree protection measures, including:

- Ten (10) High Retention Value (Trees 2, 51, 52, 128, 134, 145, 155, 170, 171, 184); and
- 22 Moderate Retention Value (Trees 49, 58, 59, 60, 61, 62, 85, 135, 139, 143, 144, 160, 173, 182, 183, 185, 186, 187, 189, 199, 200, 207); and
- Three (3) Low Retention Value (Trees 65, 136, 140), and
- Three (3) Very Low Retention Value (Trees 63, 138, 201).

The TPZ of these trees can feasibly be offset into unimpacted areas and these trees can be retained with general tree protection measures as required in **Section 7.2**.

A project arborist (minimum AQF5) should be appointed to supervise construction works and prepare a detailed Tree Protection Plan for each retained tree prior to Construction Certificate.

All trees as assessed within this report can feasibly be retained if the above tree protection methods are utilised.

Table 3 provides a summary of potential impact assessment.

Table 3 Summary of Impact Assessment

Tree Assessment	Retention Value (Tree No)				Total
	High	Moderate	Low	Very Low	
Retain - Minimal Impact	10, Stand 1	22	3	3	38 Trees, 1 Stand
Retain - Minimal Impact (Underbore)	61	55	12	17	145
Retain - Potential TPZ Encroachment	6	2	4	0	12
Retain - Potential SRZ Encroachment	4	5	7, Stand 2	0	16 Trees, 1 Stand
Total Trees Assessed	81 Trees, 1 Stand	84	26 Trees, 1 Stand	20	211 Trees, 2 Stand

7.0 Recommendations

7.1 Tree Retention and Removal

- A project arborist (minimum AQF5) should be appointed to supervise construction works and prepare a detailed Tree Protection Plan prior to Construction Certificate.
- Due to the proposed footprint following an old alignment and utilising existing pits the disturbance in some areas will be minimal, so while the TPZs appear to be encroached severely in some of these locations it is estimated that the impact will be minimal with appropriate construction methodology.
- Trees designated for retention within this report as outlined in **Section 6** to the development footprint should be retained with Tree Protection Measures.
- Under boring by directional drilling at a minimum design depth of 0.8m below ground level, with entry and exit pits for the under-bore located outside of the TPZ. This method is considered to be of minimal impact to trees identified as above.
- Where trees will have their TPZ or SRZ zones encroached then soft excavation methods should be considered.
- Supervision of any encroachment of a TPZ or SRZ should be undertaken by the project arborist to ensure the impact on trees is minimal.
- Any roots that need to be removed during excavation and construction should be done with a sharp tool appropriate for the job such as a chainsaw, reciprocating saw or secateurs.
- Stockpiling of excavated material should not be within a TPZ.

7.2 Tree Protection Measures

- All tree maintenance and pruning works should be carried out by a qualified tree worker in accordance with AS4373 –2007 Pruning of Amenity Trees.
- A continuous TPZ fence should be installed for retained trees. The TPZ shall be delineated by a 1.8m interlocking chain wire fence located around trees designated to be retained within close proximity to the Works, in accordance with AS 4687. **Appendix E** details tree protection fencing that should be implemented. Where TPZ fencing is impractical, the TPZ shall be delineated by post and flagging.
- TPZ fencing must be installed before the commencement of any Works. The fencing should not be removed or altered until after the completion of works.
- All Contractors working in close proximity to the TPZ of Trees to be retained should be briefed as to the requirements of the Tree Protection Zone.
- The TPZ fencing and zone should be certified by the project arborist before construction commences.
- Tree health and condition should be monitored by the project arborist at regular stages during construction, at practical completion of construction, and after completion.
- The following activities should be avoided within the TPZ of trees to be retained where practicable:
 - Machine excavation of soil including trenching;
 - Operation of heavy equipment;
 - Stockpiling of soils;

- Storage of heavy or other equipment;
 - Parking of vehicles;
 - Wash down and cleaning of equipment;
 - Excavation for silt fencing;
 - Dumping of waste;
 - Change of soil level or gradient; and
 - Covering with concrete, impermeable, or compacted surfaces.
- Where works are required that encroach into TPZ of trees to be retained, additional protection measures, which include trunk and low branch guards, and ground protection measures should be implemented following guidance in Australian standard *AS 4970 – 2009 Protection of trees on development Sites* (**Appendix D**). These works should only be conducted under supervision of the project arborist. The use of “soft” construction methods including manual and vacuum removal of soils is recommended for works conducted within the TPZ of Trees to be retained.

7.3 Other Recommendations

- Clothing, equipment and boots should be clean and sanitised prior to each site visit to prevent onsite introduction of plant pests and diseases such as Myrtle rust.
- Vehicles and construction equipment should utilise designated entry and egress points to avoid potential of impacts on Trees to be retained.

8.0 Conclusion

The recommendations for tree retention and removal have been made with consideration of minimising Arboricultural impacts.

Based on the proposed development plans and above tree assessment, the current proposal footprint will have minimal impacts on 183 of the assessed trees. There is potential for major (>10%) TPZ and SRZ encroachment on twelve (12) and sixteen (16) of the assessed trees, respectively.

Please note that assessment of projected impacts to trees has been made with regards to available development plans. These recommendations may be subject to change once further design and engineering detail has been prepared and this report will require updating in accordance with these changes, inclusive of final determination of tree removal and retention.

The implementation of a detailed Tree Protection Plan and Tree Protection measures will be an essential part of the Construction Environment Management Plan to avoid loss of trees in close proximity to the construction footprint.

We trust this meets your requirements. Should you require further details or clarification, please do not hesitate to contact the undersigned or Natalie Black, Senior Environmental Manager (0431 249 360).

Yours faithfully,



Warwick Muir

Ecologist / Arborist

BSc AQF5

0448 689 698

9.0 References

- AEP (2023) Ecological Assessment Report (EAR). Proposed upgrades and realignment of Sewer Services along Brolga Way, Hue Hue Road, and Alison Road in Wyong NSW. Unpublished Report.
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Appendix A – Tree Figures

Figures 3 to 17- Tree Locations

Figures 18 to 32 – Tree Assessment

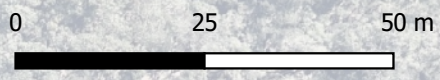
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

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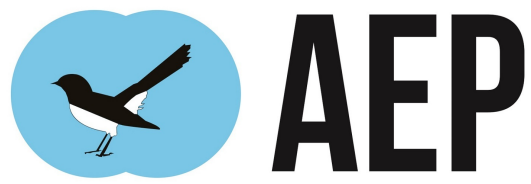
- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



Notes:
1. Boundaries are not survey accurate
2. Do not scale off the plan



Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 4 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Subject Site
-  Cadastre
-  Sewer Pipeline
-  Proposed Underbore Zone

Tree Location & Retention Value

-  High
-  Moderate
-  Low
-  Very Low



0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 5 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

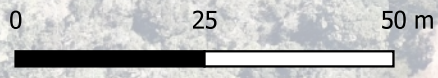
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 6 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low

Stand Location & Retention Value

- Low



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 7 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low

Stand Location & Retention Value

- Low



AEP

Figure 8 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastral
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 9 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



118

117

116

113

110

111

112

0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 10 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 11 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

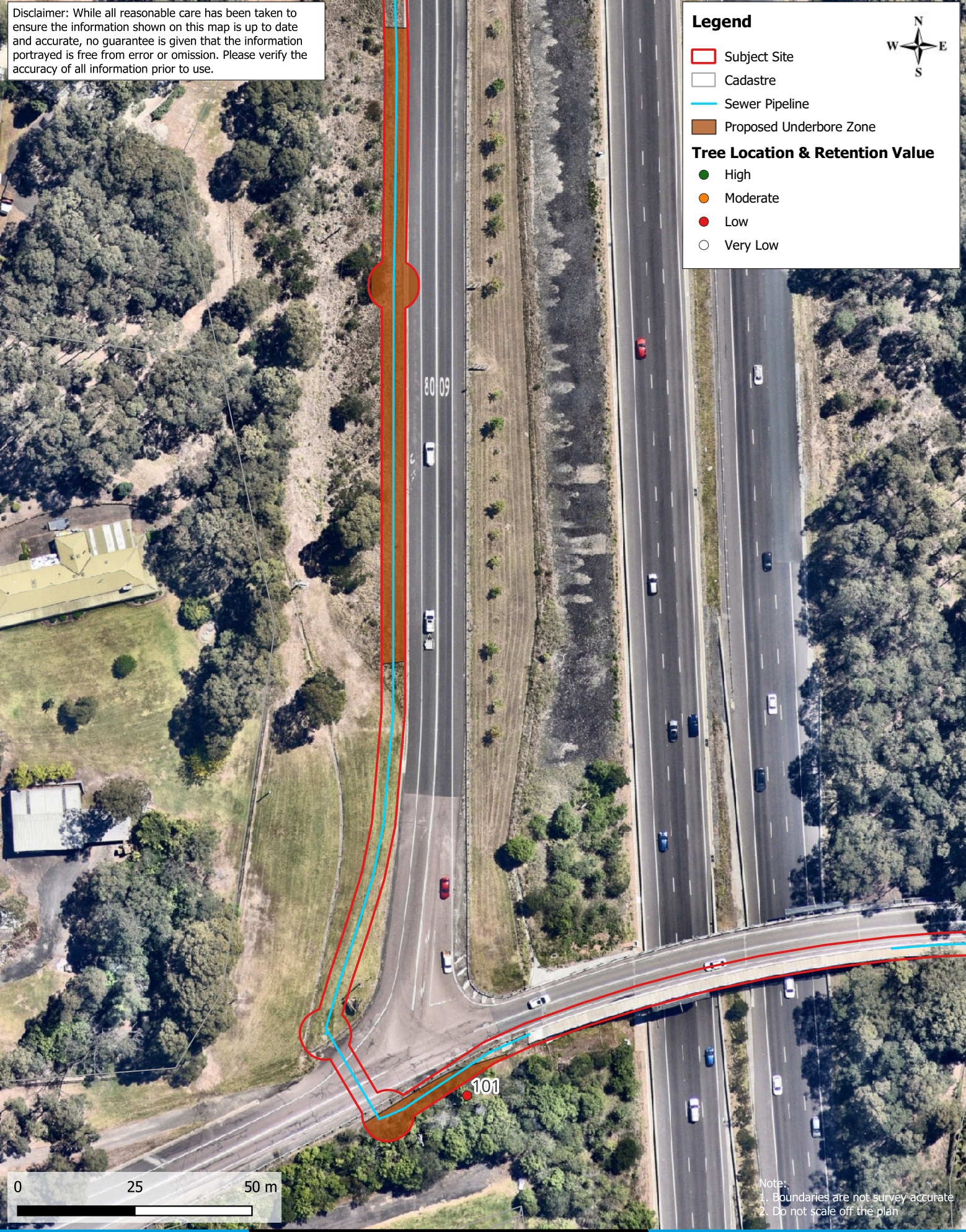
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 12 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 13 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 14 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

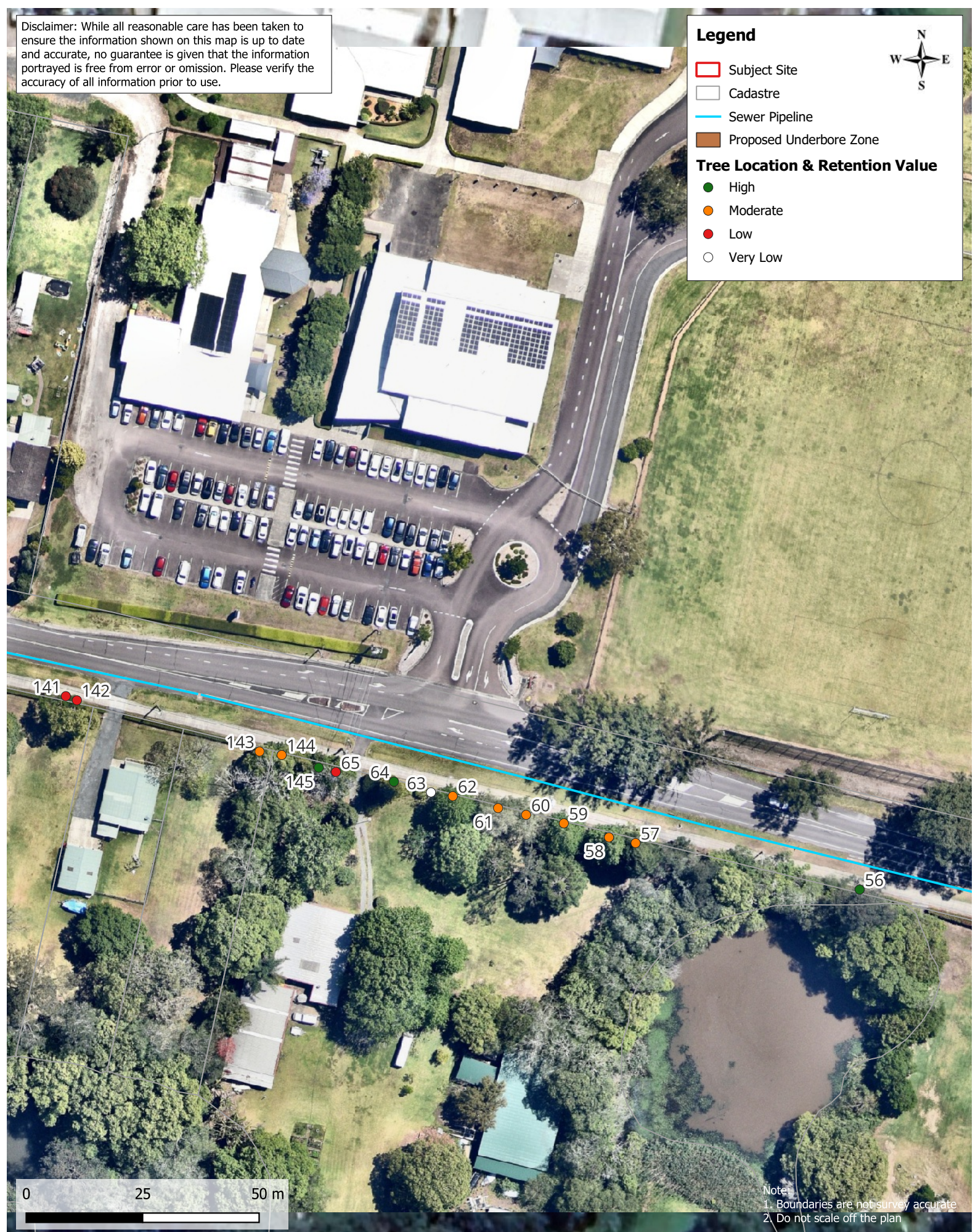
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 15 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone



Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low

Stand Location & Retention Value

- High



AEP

Figure 16 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Sewer Pipeline
- Proposed Underbore Zone

Tree Location & Retention Value

- High
- Moderate
- Low
- Very Low



AEP

Figure 17 - Tree Location & Retention Value

Date: December 2023

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



AEP

Figure 18 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastral
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline



Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



Notes:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 19 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



Note:
1. Boundaries are not survey accurate.
2. Do not scale off the plan.



AEP

Figure 20 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 21 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Sewer Pipeline



Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



AEP

Figure 22 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastral
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 23 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale off this plan



AEP

Figure 25 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



0 25 50 m

Note:
1. Boundaries are not survey accurate.
2. Do not scale off the plan



AEP

Figure 26 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



0 25 50 m

Note:
1. Boundaries are not survey accurate
2. Do not scale on the plan



AEP

Figure 27 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



AEP

Figure 28 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline



Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



Note:
1. Boundaries are not survey accurate
2. Do not scale off the plan



AEP

Figure 29 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Soft Excavation / Project Arborist
- Sewer Pipeline

Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



AEP

Figure 30 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

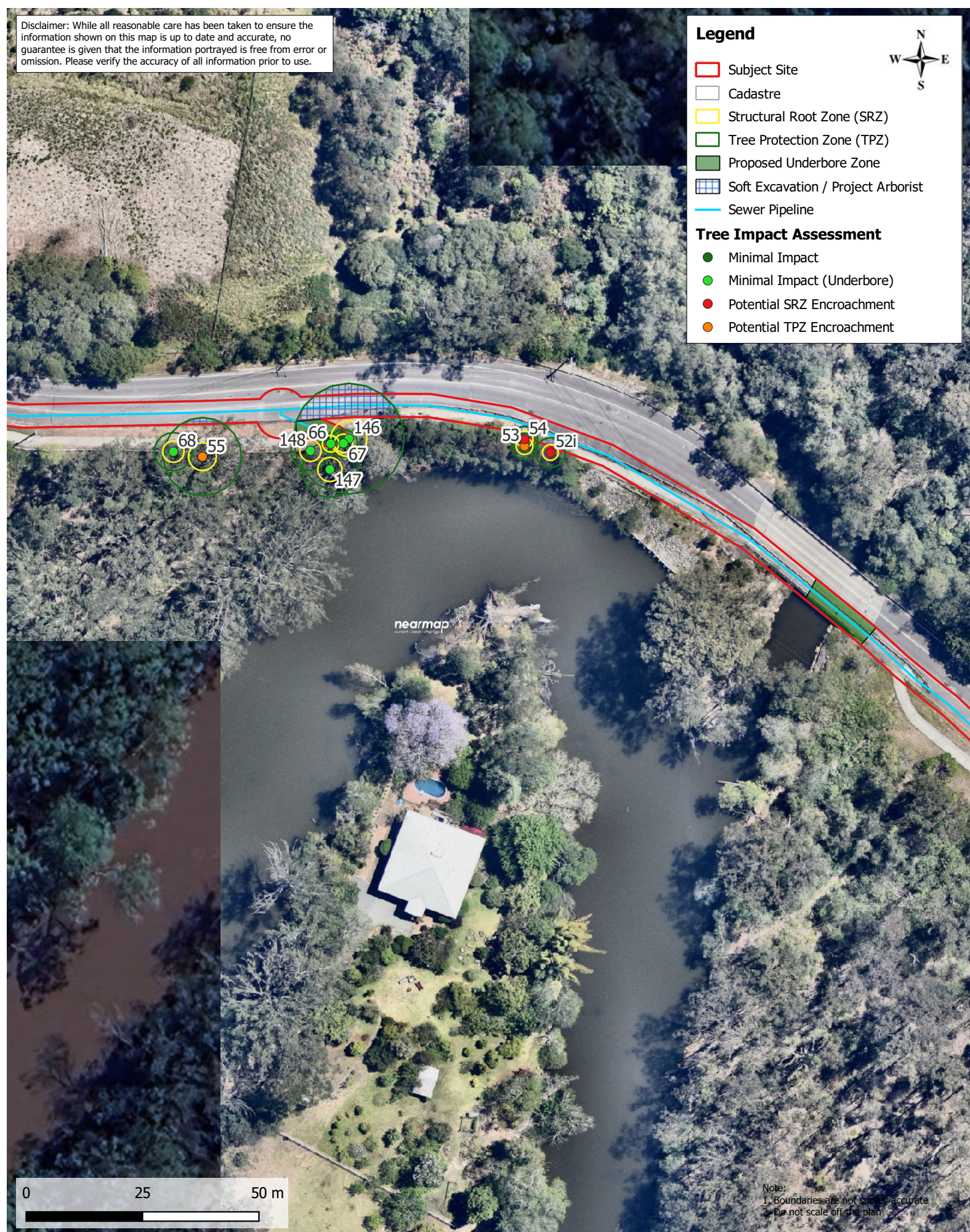
Legend

-  Subject Site
-  Cadastre
-  Structural Root Zone (SRZ)
-  Tree Protection Zone (TPZ)
-  Proposed Underbore Zone
-  Soft Excavation / Project Arborist
-  Sewer Pipeline



Tree Impact Assessment

-  Minimal Impact
-  Minimal Impact (Underbore)
-  Potential SRZ Encroachment
-  Potential TPZ Encroachment



AEP

Figure 31 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

- Subject Site
- Cadastre
- Structural Root Zone (SRZ)
- Tree Protection Zone (TPZ)
- Proposed Underbore Zone
- Soft Excavation / Project Arborist
- Sewer Pipeline



Tree Impact Assessment

- Minimal Impact
- Minimal Impact (Underbore)
- Potential SRZ Encroachment
- Potential TPZ Encroachment



AEP

Figure 32 - Tree Impact Assessment

Date: November 2024

Location: Wyong Service Centre Sewer Connection, Wyong, NSW

Client: Ampol Pty. Ltd. c/- Mostyn Copper

AEP ref: 2634.03

Appendix B – Tree Schedule

Appendix B– Assessed Tree Schedule

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m ²)										
1	<i>Corymbia maculata</i>	Spotted Gum	0.34	0.38	3	3	3	3	3	28	22	Semi-mature	Good	Good	High	40+	High	4.1	2.2	Retain - Potential TPZ Encroachment
2	<i>Corymbia maculata</i>	Spotted Gum	0.39	0.45	3	0	3	4	2.5	20	22	Mature	Good	Good	High	40+	High	4.7	2.4	Retain - Minimal Impact
3	<i>Corymbia maculata</i>	Spotted Gum	0.54	0.55	3	5	3	5	4	50	22	Mature	Good	Good	High	40+	High	6.5	2.6	Retain - Potential SRZ Encroachment
4	<i>Acacia implexa</i>	Hickory Wattle	0.50	0.55	4	3	3	3	3.25	33	5	Mature	Good	Fair	Moderate	15-40	Moderate	6.0	2.6	Retain - Potential SRZ Encroachment
5	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	0.28	0.50	2	3	3	1	2.25	16	8	Semi-mature	Fair	Fair	Moderate	15-40	Moderate	3.4	2.5	Retain - Potential SRZ Encroachment
6	<i>Eucalyptus robusta</i>	Swamp Mahogany	0.45	0.55	5	5	5	5	5	79	16	Mature	Good	Good	Moderate	40+	Moderate	5.4	2.6	Retain - Potential SRZ Encroachment
7	<i>Eucalyptus robusta</i>	Swamp Mahogany	0.50	0.60	6	5	5	5	5.25	87	20	Mature	Good	Good	Moderate	40+	Moderate	6.0	2.7	Retain - Potential SRZ Encroachment
8	<i>Casuarina glauca</i>	Swamp Oak	0.24	0.40	2	3	2	2	2.25	16	6	Mature	Fair	Fair	Low	.5-15	Low	2.9	2.3	Retain - Minimal Impact (Underbore)
9	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.30	0.44	2	1	3	2	2	13	5	Mature	Poor	Poor	Low	.5-15	Low	3.6	2.3	Retain - Minimal Impact (Underbore)
10	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.30	0.35	0	0	0	0	0	0	15	Mature	Dead	Dead	Very Low	Dead	Very Low	3.6	2.1	Retain - Minimal Impact (Underbore)
11	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.45	0.59	5	5	5	5	5	79	22	Mature	Good	Great	High	40+	High	5.4	2.7	Retain - Minimal Impact (Underbore)
12	<i>Glochidion ferdinandi</i>	Cheese Tree	0.16	0.20	2	3	3	3	2.75	24	5	Mature	Good	Fair	High	15-40	Moderate	2.0	1.7	Retain - Minimal Impact (Underbore)
13	<i>Glochidion ferdinandi</i>	Cheese Tree	0.13	0.14	4	3	2	2	2.75	24	5	Mature	Good	Good	High	15-40	Moderate	2.0	1.5	Retain - Minimal Impact (Underbore)
14	<i>Glochidion ferdinandi</i>	Cheese Tree	0.20	0.20	2	2	2	3	2.25	16	5	Mature	Good	Good	High	15-40	Moderate	2.4	1.7	Retain - Minimal Impact (Underbore)
15	<i>Glochidion ferdinandi</i>	Cheese Tree	0.15	0.20	3	3	3	3	3	28	5	Mature	Good	Good	High	15-40	Moderate	2.0	1.7	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
16	<i>Glochidion ferdinandi</i>	Cheese Tree	0.15	0.20	3	3	3	3	3	28	6	Mature	Good	Good	High	15-40	Moderate	2.0	1.7	Retain - Minimal Impact (Underbore)
17	<i>Grevillea robusta</i>	Silky Oak	0.14	0.20	4	3	3	2	3	28	5	Semi-mature	Fair	Fair	Low	.5-15	Low	2.0	1.7	Retain - Minimal Impact (Underbore)
18	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.90	0.95	6	4	3	2	3.75	44	22	Mature	Fair	Good	High	15-40	Moderate	10.8	3.2	Retain - Minimal Impact (Underbore)
19	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	1.10	1.30	8	8	8	6	7.5	177	23	Mature	Good	Good	High	15-40	Moderate	13.2	3.7	Retain - Minimal Impact (Underbore)
20	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	1.10	1.30	6	6	6	5	5.75	104	23	Mature	Good	Good	High	15-40	Moderate	13.2	3.7	Retain - Minimal Impact (Underbore)
21	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.50	0.55	2	2	3	2	2.25	16	12	Mature	Fair	Fair	Moderate	.5-15	Low	6.0	2.6	Retain - Minimal Impact (Underbore)
23	<i>Eucalyptus acmenoides</i>	White Mahogany	0.60	0.65	7	7	6	7	6.75	143	22	Mature	Good	Good	High	40+	High	7.2	2.8	Retain - Minimal Impact (Underbore)
24	<i>Melaleuca ericifolia</i>	Swamp Paperbark	0.21	0.60	1	3	3	5	3	28	7	Mature	Good	Good	High	15-40	Moderate	2.5	2.7	Retain - Minimal Impact (Underbore)
25	<i>Corymbia maculata</i>	Spotted Gum	0.23	0.27	2	2	2	2	2	13	12	Semi-mature	Good	Good	Moderate	40+	Moderate	2.8	1.9	Retain - Minimal Impact (Underbore)
26	<i>Erythrina x sykesii</i>	Australian Coral Tree	0.42	0.90	8	8	8	8	8	201	21	Mature	Good	Good	Very Low	.5-15	Very Low	5.0	3.2	Retain - Minimal Impact (Underbore)
27	<i>Corymbia maculata</i>	Spotted Gum	0.23	0.27	2	4	4	4	8.5	38	25	Semi-mature	Good	Good	Moderate	40+	Moderate	2.8	1.9	Retain - Minimal Impact (Underbore)
28	<i>Eucalyptus acmenoides</i>	White Mahogany	0.60	0.65	8	8	8	8	8	201	23	Mature	Good	Good	Very High	40+	High	7.2	2.8	Retain - Minimal Impact (Underbore)
29	<i>Glochidion ferdinandi</i>	Cheese Tree	0.20	0.40	5	5	5	5	5	79	9	Mature	Good	Good	High	15-40	Moderate	2.4	2.3	Retain - Minimal Impact (Underbore)
30	<i>Cinnamomum camphora</i>	Camphor Laurel	0.25	0.55	5	5	5	5	5	79	7	Semi-mature	Good	Good	Very Low	.5-15	Very Low	3.0	2.6	Retain - Minimal Impact (Underbore)
31	<i>Pinus radiata</i>	Monterey Pine	0.70	0.80	8	8	8	8	8	201	24	Mature	Good	Good	Very Low	.5-15	Very Low	8.4	3.0	Retain - Minimal Impact (Underbore)
32	<i>Corymbia maculata</i>	Spotted Gum	0.51	0.59	6	6	6	6	6	113	23	Mature	Exceptional	Great	High	40+	High	6.1	2.7	Retain - Minimal Impact (Underbore)
33	<i>Corymbia maculata</i>	Spotted Gum	0.50	0.58	4	4	4	8	5	79	23	Mature	Good	Good	High	40+	High	6.0	2.6	Retain - Minimal Impact (Underbore)
34	<i>Corymbia maculata</i>	Spotted Gum	0.68	0.70	6	6	8	8	7	154	23	Mature	Good	Good	High	40+	High	8.2	2.8	Retain - Minimal Impact (Underbore)
35	<i>Pinus radiata</i>	Monterey Pine	1.00	0.80	8	4	7	8	6.75	143	24	Mature	Poor	Good	Very Low	.5-15	Very Low	12.0	3.0	Retain - Minimal Impact (Underbore)
36	<i>Casuarina glauca</i>	Swamp Oak	0.23	0.30	4	2	5	4	3.75	44	10	Mature	Good	Good	High	15-40	Moderate	2.8	2.0	Retain - Minimal Impact (Underbore)
37	<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	0.24	0.30	2	2	2	2	2	13	7	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.9	2.0	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
38	<i>Corymbia maculata</i>	Spotted Gum	0.80	0.80	8	6	6	6	6.5	133	24	Mature	Good	Good	High	40+	High	9.6	3.0	Retain - Minimal Impact (Underbore)
39	<i>Corymbia maculata</i>	Spotted Gum	0.90	1.00	6	10	6	10	8	201	24	Mature	Good	Good	Very High	40+	High	10.8	3.3	Retain - Minimal Impact (Underbore)
40	<i>Corymbia maculata</i>	Spotted Gum	0.80	0.85	4	10	8	10	8	201	24	Mature	Good	Good	Very High	40+	High	9.6	3.1	Retain - Minimal Impact (Underbore)
41	<i>Erythrina x sykesii</i>	Australian Coral Tree	0.22	0.26	4	4	4	4	4	50	7	Semi-mature	Good	Good	Very Low	.5-15	Very Low	2.6	1.9	Retain - Minimal Impact (Underbore)
42	<i>Eucalyptus acmenoides</i>	White Mahogany	0.40	0.42	4	6	8	6	6	113	12	Mature	Good	Fair	High	40+	High	4.8	2.3	Retain - Minimal Impact (Underbore)
43	<i>Eucalyptus acmenoides</i>	White Mahogany	0.35	0.37	6	0	4	6	4	50	12	Mature	Good	Good	High	40+	High	4.2	2.2	Retain - Minimal Impact (Underbore)
44	<i>Eucalyptus acmenoides</i>	White Mahogany	0.25	0.28	3	1	3	6	3.25	33	7	Semi-mature	Good	Good	High	40+	High	3.0	1.9	Retain - Minimal Impact (Underbore)
45	<i>Corymbia maculata</i>	Spotted Gum	0.84	0.89	10	9	10	10	9.75	299	24	Mature	Good	Good	Very High	40+	High	10.1	3.2	Retain - Minimal Impact (Underbore)
46	<i>Pinus radiata</i>	Monterey Pine	1.00	1.00	9	9	9	4	7.75	189	18	Mature	Fair	Good	Very Low	.5-15	Very Low	12.0	3.3	Retain - Minimal Impact (Underbore)
47	<i>Eucalyptus sp.</i>	Eucalypt	0.58	0.64	0	0	0	0	0	0	18	Mature	Dead	Dead	Very Low	Dead	Very Low	7.0	2.7	Retain - Minimal Impact (Underbore)
48	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.60	0.70	3	4	6	4	4.25	57	23	Mature	Good	Good	High	40+	High	7.2	2.8	Retain - Minimal Impact (Underbore)
49	<i>Alphitonia excelsa</i>	Red Ash	0.21	0.26	3	1	4	3	2.75	24	8	Semi-mature	Fair	Fair	Moderate	40+	Moderate	2.6	1.9	Retain - Minimal Impact
50	<i>Corymbia maculata</i>	Spotted Gum	0.38	0.41	3	2	2	2	2.25	16	22	Mature	Good	Good	High	40+	High	4.6	2.3	Retain - Potential TPZ Encroachment
51	<i>Corymbia maculata</i>	Spotted Gum	0.64	0.76	6	7	5	6	6	113	25	Mature	Good	Good	High	40+	High	7.7	2.9	Retain - Minimal Impact
52	<i>Corymbia maculata</i>	Spotted Gum	0.57	0.75	5	6	4	5	5	79	25	Mature	Good	Good	High	40+	High	6.8	2.9	Retain - Minimal Impact
52i	<i>Casuarina glauca</i>	Swamp Oak	0.27	0.21	3	1	1	1	1.5	7	12	Mature	Fair	Good	Moderate	.5-15	Low	3.2	1.7	Retain - Potential SRZ Encroachment
53	<i>Eucalyptus pilularis</i>	Blackbutt	0.23	0.23	4	4	2	1	2.75	24	12	Semi-mature	Good	Good	High	40+	High	2.8	1.8	Retain - Potential TPZ Encroachment
54	<i>Casuarina glauca</i>	Swamp Oak	0.23	0.24	2	2	2	2	2	13	13	Mature	Good	Good	Moderate	.5-15	Low	2.8	1.8	Retain - Potential SRZ Encroachment
55	<i>Eucalyptus pilularis</i>	Blackbutt	0.70	0.80	9	8	7	7	7.75	189	25	Mature	Fair	Good	High	15-40	Moderate	8.4	3.0	Retain - Potential TPZ Encroachment
56	<i>Eucalyptus pilularis</i>	Blackbutt	0.62	0.73	5	7	4	6	5.5	95	25	Mature	Good	Good	High	40+	High	7.4	2.9	Retain - Potential TPZ Encroachment
57	<i>Araucaria bidwillii</i>	Bunya Pine	0.68	0.75	4	4	4	4	4	50	18	Mature	Good	Good	Moderate	40+	Moderate	8.2	2.9	Retain - Potential TPZ Encroachment
58	<i>Liquidambar styraciflua</i>	Liquidamber	0.45	0.52	2	2	2	2	2	13	15	Mature	Good	Good	Moderate	40+	Moderate	5.4	2.5	Retain - Minimal Impact
59	<i>Liquidambar styraciflua</i>	Liquidamber	0.42	0.45	3	2	3	2	2.5	20	13	Mature	Good	Good	Moderate	40+	Moderate	5.0	2.4	Retain - Minimal Impact
60	<i>Callistemon viminalis</i>	Weeping Bottlebrush	0.40	0.35	4	3	4	3	3.5	38	10	Mature	Good	Good	High	15-40	Moderate	4.8	2.1	Retain - Minimal Impact

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
61	<i>Callistemon viminalis</i>	Weeping Bottlebrush	0.41	0.45	4	3	4	3	3.5	38	12	Mature	Good	Good	High	15-40	Moderate	4.9	2.4	Retain - Minimal Impact
62	<i>Liquidambar styraciflua</i>	Liquidamber	0.38	0.45	3	2	3	2	2.5	20	15	Mature	Good	Good	Moderate	40+	Moderate	4.6	2.4	Retain - Minimal Impact
63	<i>Robinia pseudoacacia</i>	Black Locust	0.15	0.17	1	2	1	2	1.5	7	7	Semi-mature	Fair	Poor	Moderate	<5	Very Low	2.0	1.6	Retain - Minimal Impact
64	<i>Araucaria heterophylla</i>	Norfolk Island Pine	0.52	0.56	2	2	2	2	2	13	20	Mature	Good	Good	High	40+	High	6.2	2.6	Retain - Potential TPZ Encroachment
65	<i>Cinnamomum camphora</i>	Camphor Laurel	0.15	0.25	4	3	3	3	3.25	33	7	Semi-mature	Good	Fair	Very Low	40+	Low	2.0	1.8	Retain - Minimal Impact
66	<i>Glochidion ferdinandi</i>	Cheese Tree	0.18	0.25	4	3	3	2	3	28	8	Semi-mature	Good	Fair	High	40+	High	2.1	1.8	Retain - Minimal Impact (Underbore)
67	<i>Alphitonia excelsa</i>	Red Ash	0.25	0.31	5	7	5	4	5.25	87	10	Semi-mature	Fair	Fair	High	15-40	Moderate	3.0	2.0	Retain - Minimal Impact (Underbore)
68	<i>Eucalyptus acmenoides</i>	White Mahogany	0.34	0.40	3	3	3	3	3	28	15	Mature	Good	Good	High	15-40	Moderate	4.1	2.3	Retain - Minimal Impact (Underbore)
69	<i>Corymbia maculata</i>	Spotted Gum	0.35	0.38	6	7	6	7	6.5	133	22	Mature	Good	Good	High	40+	High	4.2	2.2	Retain - Minimal Impact (Underbore)
70	<i>Corymbia maculata</i>	Spotted Gum	0.55	0.62	5	5	6	4	5	79	22	Mature	Good	Good	High	40+	High	6.6	2.7	Retain - Minimal Impact (Underbore)
71	<i>Corymbia maculata</i>	Spotted Gum	0.40	0.54	6	6	5	5	5.5	95	22	Mature	Good	Good	High	40+	High	4.8	2.6	Retain - Minimal Impact (Underbore)
72	<i>Corymbia maculata</i>	Spotted Gum	0.59	0.83	7	7	7	7	7	154	20	Mature	Good	Good	Very High	40+	High	7.1	3.1	Retain - Minimal Impact (Underbore)
73	Dead Tree	Stag	0.29	0.32	0	0	0	0	0	0	7	Mature	Dead	Dead	Very Low	Dead	Very Low	3.5	2.1	Retain - Minimal Impact (Underbore)
74	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.25	0.43	1	1	2	1	1.25	5	7	Semi-mature	Fair	Good	High	15-40	Moderate	3.0	2.3	Retain - Minimal Impact (Underbore)
75	<i>Corymbia maculata</i>	Spotted Gum	0.41	0.66	3	3	3	3	3	28	21	Mature	Good	Good	High	40+	High	4.9	2.8	Retain - Minimal Impact (Underbore)
76	<i>Corymbia maculata</i>	Spotted Gum	0.31	0.35	4	4	2	3	3.25	33	20	Mature	Good	Fair	High	40+	High	3.7	2.1	Retain - Minimal Impact (Underbore)
77	<i>Corymbia maculata</i>	Spotted Gum	0.21	0.26	1	1	1	1	1	3	15	Semi-mature	Good	Good	High	15-40	Moderate	2.5	1.9	Retain - Minimal Impact (Underbore)
78	<i>Corymbia maculata</i>	Spotted Gum	0.40	0.48	4	5	4	4	4.25	57	22	Mature	Good	Good	High	40+	High	4.8	2.4	Retain - Minimal Impact (Underbore)
79	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.26	0.54	2	2	2	2	2	13	5	Semi-mature	Good	Good	High	15-40	Moderate	3.2	2.6	Retain - Minimal Impact (Underbore)
80	<i>Corymbia maculata</i>	Spotted Gum	0.19	0.22	1	1	1	1	1	3	8	Semi-mature	Poor	Poor	Moderate	15-40	Moderate	2.3	1.8	Retain - Minimal Impact (Underbore)
81	<i>Corymbia maculata</i>	Spotted Gum	0.23	0.26	3	4	2	3	3	28	18	Semi-mature	Good	Good	High	40+	High	2.8	1.9	Retain - Minimal Impact (Underbore)
82	<i>Corymbia maculata</i>	Spotted Gum	0.24	0.28	4	3	2	3	3	28	20	Semi-mature	Good	Good	High	40+	High	2.9	1.9	Retain - Minimal Impact (Underbore)
82i	<i>Corymbia maculata</i>	Spotted Gum	0.19	0.24	1.5	1.5	1.5	1.5	1.5	7	18	Semi-mature	Good	Good	High	15-40	Moderate	2.3	1.8	Retain - Minimal Impact (Underbore)
83	<i>Corymbia maculata</i>	Spotted Gum	0.60	0.74	8	5	7	5	6.25	123	25	Mature	Good	Good	High	40+	High	7.2	2.9	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
84	<i>Corymbia maculata</i>	Spotted Gum	0.45	0.70	7	4	5	6	5.5	95	23	Mature	Good	Good	High	40+	High	5.4	2.8	Retain - Minimal Impact (Underbore)
85	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.15	0.19	1	2	1	2	1.5	7	7	Semi-mature	Good	Good	High	15-40	Moderate	2.0	1.6	Retain - Minimal Impact
86	<i>Corymbia maculata</i>	Spotted Gum	0.25	0.30	1	2	2	0	1.25	5	9	Semi-mature	Poor	Poor	Moderate	.5-15	Low	3.0	2.0	Retain - Minimal Impact (Underbore)
87	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.26	0.29	2	2	2	2	2	13	7	Mature	Good	Good	High	15-40	Moderate	3.1	2.0	Retain - Minimal Impact (Underbore)
88	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.21	0.25	2	1	2	2	1.75	10	8	Mature	Good	Good	High	15-40	Moderate	2.5	1.8	Retain - Minimal Impact (Underbore)
101	<i>Acacia irrorata</i>	Green Wattle	0.30	0.32	5	3	2	3	3.25	33	7	Mature	Poor	Fair	Low	.5-15	Low	3.5	2.1	Retain - Potential TPZ Encroachment
102	<i>Glochidion ferdinandi</i>	Cheese Tree	0.37	0.35	4	4	4	4	4	50	9	Mature	Good	Good	High	40+	High	4.4	2.1	Retain - Potential SRZ Encroachment
103	<i>Glochidion ferdinandi</i>	Cheese Tree	0.22	0.24	3	3	3	3	3	28	6	Semi-mature	Good	Good	Moderate	40+	Moderate	2.6	1.8	Retain - Potential SRZ Encroachment
104	<i>Corymbia maculata</i>	Spotted Gum	0.54	0.59	6.5	4	4	1	3.875	47	20	Mature	Good	Good	High	40+	High	6.5	2.7	Retain - Minimal Impact (Underbore)
105	<i>Corymbia maculata</i>	Spotted Gum	0.52	0.63	4	5	7	2	4.5	64	22	Mature	Good	Good	High	40+	High	6.2	2.7	Retain - Minimal Impact (Underbore)
106	<i>Corymbia maculata</i>	Spotted Gum	0.49	0.53	7	4	0	2	3.25	33	20	Mature	Good	Good	High	40+	High	5.9	2.5	Retain - Minimal Impact (Underbore)
107	<i>Corymbia maculata</i>	Spotted Gum	0.54	0.64	6	5	4	2	4.25	57	21	Mature	Good	Good	High	40+	High	6.4	2.7	Retain - Minimal Impact (Underbore)
108	<i>Corymbia maculata</i>	Spotted Gum	0.40	0.44	3	7	4	1	3.75	44	19	Mature	Good	Good	High	40+	High	4.8	2.3	Retain - Minimal Impact (Underbore)
109	<i>Corymbia maculata</i>	Spotted Gum	0.24	0.27	4	4	1	2	2.75	24	12	Mature	Fair	Good	Moderate	40+	Moderate	2.9	1.9	Retain - Minimal Impact (Underbore)
110	<i>Corymbia maculata</i>	Spotted Gum	0.39	0.43	2	4	3	6	3.75	44	21	Mature	Good	Good	High	40+	High	4.7	2.3	Retain - Potential SRZ Encroachment
111	<i>Corymbia maculata</i>	Spotted Gum	0.46	0.50	7	4	3	5	4.75	71	21	Mature	Good	Good	High	40+	High	5.5	2.5	Retain - Potential SRZ Encroachment
112	<i>Corymbia maculata</i>	Spotted Gum	0.47	0.51	4	4	4	4	4	50	21	Mature	Good	Good	High	40+	High	5.6	2.5	Retain - Potential TPZ Encroachment
113	<i>Cinnamomum camphora</i>	Camphor Laurel	0.93	1.10	8	7	7	7	7.25	165	14	Over-mature	Fair	Fair	Very Low	40+	Low	11.1	3.4	Retain - Minimal Impact (Underbore)
116	<i>Leptospermum petersonii*</i>	Lemon Scented Tea-tree	0.40	0.46	6	3	3	6	4.5	64	7	Mature	Good	Good	Moderate	15-40	Moderate	4.8	2.4	Retain - Minimal Impact (Underbore)
117	<i>Phoenix canariensis</i>	Canary Island Date Palm	1.10	1.20	1	5	5	3	3.5	38	6	Mature	Good	Good	Moderate	40+	Moderate	13.2	3.6	Retain - Minimal Impact (Underbore)
118	<i>Cinnamomum camphora</i>	Camphor Laurel	0.35	0.55	5	4	4	4	4.25	57	10	Mature	Good	Good	Very Low	40+	Low	4.2	2.6	Retain - Minimal Impact (Underbore)
119	<i>Eucalyptus botryoides</i>	Bangalay / Southern Mahogany	0.50	0.60	5	6	6	4	5.25	87	25	Mature	Good	Good	High	40+	High	6.0	2.7	Retain - Minimal Impact (Underbore)
120	<i>Cinnamomum camphora</i>	Camphor Laurel	0.48	0.45	4	4	4	4	4	50	15	Mature	Good	Good	Very Low	40+	Low	5.8	2.4	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
121	<i>Eucalyptus botryoides</i>	Bangalay / Southern Mahogany	0.50	0.55	4	5	10	8	6.75	143	20	Mature	Good	Good	High	40+	High	6.0	2.6	Retain - Minimal Impact (Underbore)
122	Dead tree	Stag	0.36	0.31	0	0	0	0	0	0	6	Semi-mature	Dead	Dead	Low	Dead	Very Low	4.3	2.0	Retain - Minimal Impact (Underbore)
123	<i>Cinnamomum camphora</i>	Camphor Laurel	0.47	0.48	7	4	4	6	5.25	87	10	Mature	Good	Good	Very Low	40+	Low	5.7	2.4	Retain - Minimal Impact (Underbore)
124	<i>Pinus radiata</i>	Monterey Pine	0.45	0.49	2	2	2	2	2	13	16	Over-mature	Poor	Fair	Very Low	.5-15	Very Low	5.4	2.5	Retain - Minimal Impact (Underbore)
125	<i>Pinus radiata</i>	Monterey Pine	0.80	0.88	7	6	6	6	6.25	123	22	Over-mature	Fair	Good	Very Low	15-40	Low	9.6	3.1	Retain - Minimal Impact (Underbore)
126	<i>Pinus radiata</i>	Monterey Pine	0.44	0.48	2	4	5	3	3.5	38	15	Mature	Fair	Good	Very Low	15-40	Low	5.3	2.4	Retain - Minimal Impact (Underbore)
127	<i>Corymbia maculata</i>	Spotted Gum	0.48	0.58	2	4	4	4	3.5	38	22	Mature	Good	Good	High	40+	High	5.8	2.6	Retain - Minimal Impact (Underbore)
128	<i>Araucaria heterophylla</i>	Norfolk Island Pine	0.15	0.18	1.5	1.5	1.5	1.5	1.5	7	4	Juvenile	Good	Good	High	40+	High	2.0	1.6	Retain - Minimal Impact
129	<i>Pinus Elliottii</i>	Slash Pine	0.38	0.43	5	5	4	4	4.5	64	16	Mature	Good	Good	Very Low	40+	Low	4.6	2.3	Retain - Potential SRZ Encroachment
130	<i>Cinnamomum camphora</i>	Camphor Laurel	0.21	0.45	3	3	3	3	3	28	8	Semi-mature	Good	Good	Very Low	40+	Low	2.6	2.4	Retain - Potential SRZ Encroachment
131	<i>Cinnamomum camphora</i>	Camphor Laurel	0.16	0.19	4	3	3	3	3.25	33	8	Semi-mature	Good	Good	Very Low	40+	Low	2.0	1.6	Retain - Potential SRZ Encroachment
132	<i>Cinnamomum camphora</i>	Camphor Laurel	0.27	0.40	4	3	3	3	3.25	33	8	Semi-mature	Good	Good	Very Low	40+	Low	3.3	2.3	Retain - Potential SRZ Encroachment
133	<i>Cinnamomum camphora</i>	Camphor Laurel	0.18	0.21	3	3	3	3	3	28	8	Semi-mature	Good	Good	Very Low	40+	Low	2.2	1.7	Retain - Potential SRZ Encroachment
134	<i>Robinia pseudoacacia</i>	Black Locust	0.35	0.38	4	4	4	4	4	50	6	Mature	Good	Good	High	40+	High	4.2	2.2	Retain - Minimal Impact
135	<i>Cupressus sp.</i>	Cypress	0.21	0.25	1	1	1	1	1	3	15	Mature	Good	Good	High	15-40	Moderate	2.5	1.8	Retain - Minimal Impact
136	<i>Pinus elliottii</i>	Slash Pine	0.48	0.54	1	4	7	5	4.25	57	20	Mature	Good	Good	Very Low	15-40	Low	5.8	2.6	Retain - Minimal Impact
137	<i>Pinus elliottii</i>	Slash Pine	0.67	0.74	3	4	7	5	4.75	71	21	Mature	Good	Good	Very Low	15-40	Low	8.0	2.9	Retain - Potential TPZ Encroachment
138	<i>Pinus elliottii</i>	Slash Pine	0.41	0.46	1	2	3	4	2.5	20	15	Mature	Fair	Fair	Very Low	.5-15	Very Low	4.9	2.4	Retain - Minimal Impact
139	<i>Cupressus sp.</i>	Cypress	0.21	0.25	1.5	1.5	1.5	1.5	1.5	7	6	Mature	Good	Good	High	15-40	Moderate	2.5	1.8	Retain - Minimal Impact
140	<i>Cinnamomum camphora</i>	Camphor Laurel	0.40	0.48	1	1	1	4	1.75	10	5	Mature	Poor	Poor	Very Low	15-40	Low	4.8	2.4	Retain - Minimal Impact
141	<i>Cinnamomum camphora</i>	Camphor Laurel	0.42	0.62	1	3	4	4	3	28	12	Mature	Fair	Fair	Very Low	15-40	Low	5.0	2.7	Retain - Potential TPZ Encroachment
142	<i>Cinnamomum camphora</i>	Camphor Laurel	0.42	0.62	1	4	4	4	3.25	33	14	Mature	Good	Good	Very Low	40+	Low	5.0	2.7	Retain - Potential TPZ Encroachment
143	<i>Glochidion ferdinandi</i>	Cheese Tree	0.17	0.18	1	1	1	1	1	3	7	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact
144	<i>Juniperus sp.</i>	Juniper	0.22	0.27	1	1	1	1	1	3	15	Mature	Good	Good	Moderate	15-40	Moderate	2.6	1.9	Retain - Minimal Impact

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m ²)										
145	<i>Jacaranda mimosifolia</i>	Jacaranda	0.38	0.48	4	4	4	4	4	50	12	Mature	Good	Good	High	40+	High	4.5	2.4	Retain - Minimal Impact
146	<i>Eucalyptus robusta</i>	Swamp Mahogany	0.99	1.44	3	5	5	3	4	50	28	Mature	Good	Good	High	40+	High	11.9	3.9	Retain - Minimal Impact (Underbore)
147	Dead tree	Stag	0.50	0.56	0	0	0	0	0	0	15	Mature	Dead	Dead	Low	Dead	Very Low	6.0	2.6	Retain - Minimal Impact (Underbore)
148	Dead tree	Stag	0.35	0.40	0	0	0	0	0	0	6	Mature	Dead	Dead	Very Low	Dead	Very Low	4.2	2.3	Retain - Minimal Impact (Underbore)
149	<i>Corymbia maculata</i>	Spotted Gum	0.60	0.83	1	4	2	2	2.25	16	24	Mature	Fair	Good	High	40+	High	7.2	3.1	Retain - Minimal Impact (Underbore)
150	<i>Corymbia maculata</i>	Spotted Gum	0.62	1.26	5	4	2	2	3.25	33	27	Mature	Good	Good	High	40+	High	7.4	3.6	Retain - Minimal Impact (Underbore)
151	<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark	0.49	0.52	2	2	3	3	2.5	20	16	Mature	Fair	Good	Moderate	15-40	Moderate	5.9	2.5	Retain - Minimal Impact (Underbore)
152	<i>Corymbia maculata</i>	Spotted Gum	0.59	0.70	5	4	1	2	3	28	26	Mature	Fair	Fair	Moderate	15-40	Moderate	7.1	2.8	Retain - Minimal Impact (Underbore)
153	<i>Corymbia maculata</i>	Spotted Gum	0.43	0.54	1	3	4	3	2.75	24	24	Mature	Good	Good	High	40+	High	5.2	2.6	Retain - Minimal Impact (Underbore)
154	<i>Corymbia maculata</i>	Spotted Gum	0.29	0.34	3	1	2	4	2.5	20	24	Mature	Good	Good	High	40+	High	3.5	2.1	Retain - Minimal Impact (Underbore)
155	<i>Corymbia maculata</i>	Spotted Gum	0.29	0.35	1	2	2	3	2	13	17	Semi-mature	Good	Good	High	40+	High	3.5	2.1	Retain - Minimal Impact
156	<i>Corymbia maculata</i>	Spotted Gum	0.23	0.28	1	1	1	1	1	3	15	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.8	1.9	Retain - Minimal Impact (Underbore)
157	<i>Corymbia maculata</i>	Spotted Gum	0.42	0.45	5	3	4	3	3.75	44	25	Mature	Good	Good	High	40+	High	5.0	2.4	Retain - Minimal Impact (Underbore)
158	<i>Corymbia maculata</i>	Spotted Gum	0.28	0.33	4	3	3	2	3	28	18	Mature	Good	Good	High	40+	High	3.4	2.1	Retain - Minimal Impact (Underbore)
159	<i>Corymbia maculata</i>	Spotted Gum	0.26	0.29	2	4	3	2	2.75	24	17	Mature	Good	Good	High	40+	High	3.1	2.0	Retain - Minimal Impact (Underbore)
160	<i>Corymbia maculata</i>	Spotted Gum	0.15	0.17	2	2	2	2	2	13	13	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact
161	<i>Corymbia maculata</i>	Spotted Gum	0.41	0.47	4	4	3	3	3.5	38	25	Mature	Good	Good	High	40+	High	4.9	2.4	Retain - Minimal Impact (Underbore)
162	<i>Corymbia maculata</i>	Spotted Gum	0.18	0.27	1	1	1	1	1	3	10	Semi-mature	Good	Good	Moderate	40+	Moderate	2.2	1.9	Retain - Minimal Impact (Underbore)
163	<i>Corymbia maculata</i>	Spotted Gum	0.62	0.77	7	7	7	6	6.75	143	25	Mature	Good	Good	High	40+	High	7.4	3.0	Retain - Minimal Impact (Underbore)
164	<i>Angophora floribunda</i>	Rough-barked Apple	0.14	0.17	1	1	1	1	1	3	7	Juvenile	Good	Good	Moderate	40+	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
165	<i>Eucalyptus microcorys</i>	Tallowwood	0.28	0.33	2	4	4	4	3.5	38	12	Semi-mature	Good	Good	High	40+	High	3.4	2.1	Retain - Minimal Impact (Underbore)
166	<i>Angophora floribunda</i>	Rough-barked Apple	0.23	0.26	1.5	1.5	1.5	1.5	1.5	7	12	Semi-mature	Good	Good	High	40+	High	2.8	1.9	Retain - Minimal Impact (Underbore)
167	<i>Angophora floribunda</i>	Rough-barked Apple	0.14	0.18	2	1	1	1	1.25	5	8	Juvenile	Good	Good	Moderate	40+	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
168	<i>Angophora floribunda</i>	Rough-barked Apple	0.11	0.13	1	0.5	0.5	0.5	0.625	1	5	Juvenile	Good	Good	Low	40+	Moderate	2.0	1.5	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
169	<i>Angophora floribunda</i>	Rough-barked Apple	0.14	0.17	1	0.5	0.5	1	0.75	2	8	Juvenile	Good	Good	Low	40+	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
170	<i>Angophora floribunda</i>	Rough-barked Apple	0.25	0.27	3	3	3	3	3	28	11	Semi-mature	Good	Good	High	40+	High	3.0	1.9	Retain - Minimal Impact
171	<i>Eucalyptus robusta</i>	Swamp Mahogany	0.43	0.53	4	4	4	5	4.25	57	14	Semi-mature	Good	Good	High	40+	High	5.2	2.5	Retain - Minimal Impact
172	<i>Angophora floribunda</i>	Rough-barked Apple	0.42	0.48	4	2	3	4	3.25	33	16	Mature	Good	Good	High	40+	High	5.0	2.4	Retain - Minimal Impact (Underbore)
173	<i>Callistemon salignus</i>	Willow Bottlebrush	0.20	0.25	3	2	2.5	3	2.625	22	8	Mature	Fair	Good	Moderate	15-40	Moderate	2.4	1.8	Retain - Minimal Impact
174	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.28	0.32	3	2	4	1	2.5	20	15	Semi-mature	Good	Good	High	40+	High	3.4	2.1	Retain - Minimal Impact (Underbore)
175	<i>Eucalyptus microcorys</i>	Tallowwood	0.27	0.33	5	4	1	3	3.25	33	11	Mature	Fair	Good	Moderate	15-40	Moderate	3.2	2.1	Retain - Minimal Impact (Underbore)
176	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.44	0.50	6	3	4	6	4.75	71	20	Mature	Good	Good	High	40+	High	5.3	2.5	Retain - Minimal Impact (Underbore)
177	<i>Callistemon salignus</i>	Willow Bottlebrush	0.22	0.24	3	0	2	4	2.25	16	8	Mature	Fair	Fair	Moderate	15-40	Moderate	2.6	1.8	Retain - Minimal Impact (Underbore)
178	<i>Callistemon salignus</i>	Willow Bottlebrush	0.24	0.27	3	4	4	3	3.5	38	13	Mature	Good	Good	Moderate	15-40	Moderate	2.9	1.9	Retain - Minimal Impact (Underbore)
179	<i>Angophora floribunda</i>	Rough-barked Apple	0.15	0.19	2	1	3	3	2.25	16	8	Semi-mature	Fair	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
180	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.28	0.31	1	3	3	1	2	13	19	Mature	Good	Good	High	40+	High	3.4	2.0	Retain - Minimal Impact (Underbore)
181	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.20	0.24	1	3	3	0	1.75	10	17	Semi-mature	Good	Good	Moderate	40+	Moderate	2.4	1.8	Retain - Minimal Impact (Underbore)
182	<i>Angophora floribunda</i>	Rough-barked Apple	0.18	0.22	2	1	1	2	1.5	7	9	Semi-mature	Good	Good	Moderate	40+	Moderate	2.2	1.8	Retain - Minimal Impact
183	<i>Melaleuca styphelioides</i>	Prickly-leaved Tea Tree	0.18	0.21	2	2	2	2	2	13	7	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.1	1.7	Retain - Minimal Impact
184	<i>Angophora floribunda</i>	Rough-barked Apple	0.23	0.27	3	2	4	4	3.25	33	11	Semi-mature	Good	Good	High	40+	High	2.8	1.9	Retain - Minimal Impact
185	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.27	0.50	4	3	3	3	3.25	33	6	Mature	Good	Good	Moderate	15-40	Moderate	3.2	2.5	Retain - Minimal Impact
186	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.27	0.50	3	2	3	3	2.75	24	6	Mature	Good	Good	Moderate	15-40	Moderate	3.2	2.5	Retain - Minimal Impact
187	<i>Callistemon salignus</i>	Willow Bottlebrush	0.21	0.31	2	3	2	2	2.25	16	9	Mature	Good	Good	Moderate	15-40	Moderate	2.5	2.0	Retain - Minimal Impact
188	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.42	0.45	4	4	4	4	4	50	20	Mature	Good	Good	High	40+	High	5.0	2.4	Retain - Minimal Impact (Underbore)
189	<i>Angophora floribunda</i>	Rough-barked Apple	0.19	0.23	2	2	2	2	2	13	8	Semi-mature	Fair	Good	Moderate	40+	Moderate	2.3	1.8	Retain - Minimal Impact
190	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.32	0.35	3	3	2	2	2.5	20	15	Mature	Good	Good	High	40+	High	3.8	2.1	Retain - Minimal Impact (Underbore)
191	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.35	0.48	1	1	1	2	1.25	5	15	Mature	Good	Good	High	40+	High	4.2	2.4	Retain - Minimal Impact (Underbore)
192	<i>Angophora floribunda</i>	Rough-barked Apple	0.35	0.40	5	4	1	3	3.25	33	13	Mature	Fair	Fair	Moderate	15-40	Moderate	4.2	2.3	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average	Estimated Total Canopy Area	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W	(m)	(m²)										
193	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.21	0.60	2	2	3	3	2.5	20	5	Mature	Good	Good	Moderate	15-40	Moderate	2.6	2.7	Retain - Minimal Impact (Underbore)
194	<i>Corymbia maculata</i>	Spotted Gum	0.48	0.55	4	3	4	3	3.5	38	16	Mature	Good	Good	High	40+	High	5.8	2.6	Retain - Minimal Impact (Underbore)
195	<i>Eucalyptus resinifera</i>	Red Mahogany	0.37	0.42	3	5	3	4	3.75	44	13	Mature	Good	Good	High	40+	High	4.4	2.3	Retain - Minimal Impact (Underbore)
196	Dead tree	Stag	0.23	0.24	0	0	0	0	0	0	11	Semi-mature	Dead	Dead	Very Low	Dead	Very Low	2.7	1.8	Retain - Minimal Impact (Underbore)
197	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.15	0.17	2	2	2	1	1.75	10	7	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
198	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.16	0.18	1	2	2	1	1.5	7	9	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
199	<i>Corymbia maculata</i>	Spotted Gum	0.17	0.19	2	3	2	2	2.25	16	13	Semi-mature	Good	Good	Moderate	40+	Moderate	2.0	1.6	Retain - Minimal Impact
200	<i>Callistemon salignus</i>	Willow Bottlebrush	0.19	0.21	3	2	1	3	2.25	16	13	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.3	1.7	Retain - Minimal Impact
201	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.24	0.27	0	0	0	0	0	0	11	Semi-mature	Dead	Dead	Very Low	Dead	Very Low	2.9	1.9	Retain - Minimal Impact
202	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.15	0.19	1	2	2	3	2	13	6	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
203	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.17	0.20	2	2	1	2	1.75	10	8	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.7	Retain - Minimal Impact (Underbore)
204	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.17	0.19	1	1	2	1	1.25	5	9	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
205	<i>Melaleuca nodosa</i>	Ball Honey Myrtle	0.27	0.32	3	3	3	3	3	28	12	Mature	Fair	Good	Moderate	15-40	Moderate	3.2	2.1	Retain - Minimal Impact (Underbore)
206	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.23	0.25	2	1	3	3	2.25	16	18	Semi-mature	Fair	Good	Moderate	15-40	Moderate	2.7	1.8	Retain - Minimal Impact (Underbore)
207	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.19	0.23	2	2	2	2	2	13	19	Semi-mature	Fair	Good	Moderate	15-40	Moderate	2.3	1.8	Retain - Minimal Impact
208	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.30	0.35	5	4	5	4	4.5	64	19	Mature	Good	Good	High	40+	High	3.6	2.1	Retain - Minimal Impact (Underbore)
209	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.25	0.28	3	3	3	3	3	28	19	Semi-mature	Good	Good	Moderate	15-40	Moderate	3.0	1.9	Retain - Minimal Impact (Underbore)
210	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.20	0.23	1	1	1	2	1.25	5	18	Semi-mature	Good	Good	Moderate	15-40	Moderate	2.4	1.8	Retain - Minimal Impact (Underbore)
211	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.20	0.23	2	2	2	2	2	13	16	Semi-mature	Fair	Good	Moderate	15-40	Moderate	2.4	1.8	Retain - Minimal Impact (Underbore)
212	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.20	0.23	1	4	2	1	2	13	9	Semi-mature	Good	Good	Moderate	40+	Moderate	2.4	1.8	Retain - Minimal Impact (Underbore)
213	Dead tree	Stag	0.28	0.32	0	0	0	0	0	0	8	Mature	Dead	Dead	Very Low	Dead	Very Low	3.4	2.1	Retain - Minimal Impact (Underbore)
214	<i>Corymbia maculata</i>	Spotted Gum	0.21	0.26	2	4	3	1	2.5	20	8	Semi-mature	Good	Good	Moderate	40+	Moderate	2.5	1.9	Retain - Minimal Impact (Underbore)
215	Dead tree	Stag	0.27	0.32	0	0	0	0	0	0	10	Mature	Dead	Dead	Very Low	Dead	Very Low	3.2	2.1	Retain - Minimal Impact (Underbore)
216	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.23	0.26	3	4	2	2	2.75	24	14	Semi-mature	Good	Good	High	40+	High	2.8	1.9	Retain - Minimal Impact (Underbore)

Tree ID	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average (m)	Estimated Total Canopy Area (m ²)	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Impact Assessment
					N	E	S	W												
217	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	0.24	0.29	5	2	3	3	3.25	33	17	Semi-mature	Fair	Good	Moderate	15-40	Moderate	2.9	2.0	Retain - Minimal Impact (Underbore)
218	<i>Eucalyptus robusta</i>	Swamp Mahogany	0.35	0.41	2	2	0	0	1	3	15	Mature	Poor	Poor	Low	<5	Very Low	4.2	2.3	Retain - Minimal Impact (Underbore)
219	<i>Glochidion ferdinandi</i>	Cheese Tree	0.15	0.17	2	2	2	2	2	13	11	Semi-mature	Good	Good	Moderate	40+	Moderate	2.0	1.6	Retain - Minimal Impact (Underbore)
220	<i>Phoenix canariensis</i>	Canary Island Date Palm	0.66	0.70	4	4	4	4	4	50	7	Mature	Good	Good	High	40+	High	7.9	2.8	Retain - Minimal Impact (Underbore)
221	<i>Erythrina x sykesii</i>	Australian Coral Tree	0.58	0.60	6	5	5	6	5.5	95	14	Mature	Good	Good	High	40+	High	7.0	2.7	Retain - Minimal Impact (Underbore)
222	<i>Eucalyptus saligna</i>	Sydney Blue Gum	0.70	0.80	8	8	7	9	8	201	23	Mature	Good	Good	Very High	40+	High	8.4	3.0	Retain - Minimal Impact (Underbore)
223	<i>Erythrina x sykesii</i>	Australian Coral Tree	0.35	0.39	5	5	5	5	5	79	12	Mature	Good	Good	High	40+	High	4.2	2.2	Retain - Minimal Impact (Underbore)
224	<i>Cinnamomum camphora</i>	Camphor Laurel	0.50	0.60	7	6	6	6	5.25	123	10	Mature	Good	Good	Very Low	40+	Low	6.0	2.7	Retain - Minimal Impact (Underbore)

Appendix A2: Assessed Stand Schedule

Tree ID	Approximate Number of Individuals	Scientific Name	Common Name	DBH (m)	DAB (m)	Canopy Spread (m)				Canopy Spread Average (m)	Estimated Total Canopy Area (m ²)	Height (m)	Age Class	Health	Structure	Landscape significance rating	Estimated life expectancy	Retention Value	TPZ (m)	SRZ (m)	Projected impacts
						N	E	S	W												
1	10	<i>Eucalyptus pilularis</i>	Blackbutt	0.18	0.18	1	2	1	2	1.5	7.0685835	15	Semi-mature	Good	Good	High	40+	High	2.2	1.6	Minimal Impact
2	20	<i>Cupressus sempervirens</i>	Mediterranean Cypress pencil pine	0.11	0.16	0.5	0.5	0.5	0.5	0.5	0.785398	5	Semi-mature	Good	Good	Very Low	40+	Low	2.0	1.5	Potential SRZ Encroachment

Appendix C – SULE Methodology

SULE (Safe Useful Life Expectancy)

In planning context, the time a tree can expect to be usefully retained is the most important long-term consideration. SULE i.e. a system designed to classify trees into a number of categories so that information regarding tree retention can be concisely communicated in a non-technical manner. SULE categories are easily verifiable by experienced personnel without great disparity. A tree's SULE category is the life expectancy of the tree modified first by its age, health, condition, safety and location (to give safe life expectancy), then by economics (i.e. cost of maintenance: retaining trees at an excessive management cost is not normally acceptable), effect on better trees, and sustained amenity (i.e. establishing a range of age classes in a local population). SULE assessments are not static but may be modified as dictated by changes in tree health and environment. Trees with a short SULE may be at present by making a contribution to the landscape but their value to the local amenity will decrease rapidly towards the end of this period, prior to their being removed for safety or aesthetic reasons.

SULE Methodology

1. Long SULE - tree appeared retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance;

- A. Structurally sound trees located in positions that can accommodate future growth.
- B. Trees which could be made suitable for long term retention by remedial care
- C. Trees of special significance which would warrant extraordinary efforts to secure their long-term retention.

2. Medium SULE- tree appeared to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance;

- A. Trees which may only live from 15 to 40 years.
- B. Trees which may live for more than 40 years but would be removed for safety or nuisance reasons.
- C. Trees which may live for more than 40 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting.
- D. Trees which could be made suitable for retention in the medium term by remedial care.

3. Short SULE - tree appeared to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance:

- A. Trees which may only live from 5 to 15 years.
- B. Trees which may live for more than 15 years but would be removed for safety or nuisance reasons.
- C. Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting.
- D. Trees which require substantial remediation and are only suitable for retention in the short term.

4. Removal - trees which should be removed within the next 5 years;

- A. Dead, dying, suppressed or declining trees.
- B. Dangerous trees through 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 which may live for more than 5 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting ^[L]_[SEP]

F. Trees which are damaging or may cause damage to existing structures within the next 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 or regularly pruned - Trees that can be moved or replaced;

A. Small trees less than 5m in height ^[L]_[SEP]

B. Young trees less than 15 years old but over 3m in height ^[L]_[SEP]

C. Formal hedges and trees intended for regular pruning to artificially control growth.

GLOSSARY

Age Classes

- Juvenile refers to an immature tree.
- Semi-mature refers to a tree between immaturity and full size.
- Mature refers to a full-sized tree with some capacity for further growth.
- Over-mature refers to a tree already in decline.

Diameter at breast height (DBH)

Tree stem diameter at 1.4 metres above ground level.

Diameter at buttress (DAB)

Tree stem diameter as measured above the root buttress at ground level.

Tree Protection Zone (TPZ)

An indicative measure of the area necessary to protect for tree viability, encompassing the area necessary to protect both the crown and woody roots as calculated by the formula $TPZ = DBH \times 12$

Structural Root Zone (SRZ)

An indicative measure of the spread of the primary woody and structural roots necessary for tree stability, as calculated by the formula $SRZ = (DAB \times 50)^{0.42} \times 0.64$

Visual Tree Assessment (VTA)

Visual inspection of tree only.

Co-dominant leaders

A tree where two or more stems are of similar diameter.

Included Bark Junctions

A junction where the angle of the union creates an area of ingrown bark. This can create a structural weakness, and is often found on co-dominant stems.

Crown

The portion of the tree consisting of branches and leaves and any part of the trunk from which branches arise.

Stem

The position of the tree consisting of branches and leaves and any part of the trunk from which branches arise. An organ which supports branches, leaves, flowers and fruits.

Epicormic Growth

Refers to shoots produced by dormant buds within the bark or stem of a tree as a result of stress, incorrect pruning or increased light.

Health Condition

Exceptional

- Visually complete crown with dense foliage throughout that indicates strong health and vigour.
- Leaf size and colour that is true to type for the species and free from pest (insect) and disease (pathogen) damage.
- Expected levels of primary growth or seasonal extension and internodal growth evident for the species.

- No evidence of colonising saprophytes and no deadwood evident.

Good

- Visually complete crown, varying in foliage density throughout.
- Leaf size and colour that is true to type for the species with none or minor levels of pest (insect) and/or disease (pathogen) damage evident.
- Expected levels of primary growth or seasonal extension and internodal growth evident for the species.
- No evidence of colonising saprophytes and low levels of deadwood present and approximately 10mm or less in size.

Fair

- Sparse crown, varying in foliage density throughout.
- Reduced leaf size and atypical in colour for the species.
- Low to medium levels of pest (insect) and/or disease (pathogen) damage.
- Reduced, seasonal extension and internodal growth.
- Deadwood easily visible and less than approximately 30mm in size.
- Epicormic growth may be evident.

Poor

- Obvious signs of crown decline, exhibiting significant reduction in live crown volume and foliage density with reduced leaf size and atypical in colour for the species.
- Evidence of defoliation and/or dieback of branch tips.
- Medium to high levels of pest (insect) and disease (pathogen) damage.
- Presence of exudates (kino and resins) from wounds (open and/or weeping).
- Significant reduction in seasonal extension and internodal growth, with significant levels of epicormic growth evident.
- Deadwood easily visible, approximately 30mm to 100mm in size.

Dead

- No evidence of live foliage observed throughout the crown.
- Obvious signs of cracking and shrinking wood.
- Visible evidence of delaminating bark to stems and branches.

Structure Condition

Very Good

- Strong branch unions at attachment points with no acute angles (compression and tension forks) and good branch taper at unions.
- No visibly, defective tree parts or structural defects.
- No wounds to stems and branches, no crossing and rubbing of branches and no wounds to exposed roots.
- No fungal fruiting bodies present to stems, branches and roots indicating, a presence of fungal pathogens.

Good to Fair

- Developing inclusions at unions of leading, codominant stems and branches.

- Evidence of defective tree parts (low levels) including branch and stem inclusions and crossing and rubbing of branches.
- Evidence of mechanical damage to periderm of stems, branches and roots, exposing vascular tissues.
- Exposed wounds for surface, colonising pathogens and entry points for developing decay.
- Presence of fungal fruiting bodies.
- Some evidence of cavities or hollows. (Fair only)
- No evidence of soil upheaval surrounding base of tree.

Poor

- Obvious signs and evidence of included bark to basal unions of codominant, leading stems and branches.
- Advanced, structural defects evident with failure of tree parts determined within 5 years from time of inspection and assessment.
- Evidence of decay from open wounds with presence of exudates (kino and resins) and exposed and degraded woody tissues.
- Presence of fungal fruiting bodies.
- Presence of cavities and hollows.
- Evidence of mechanical damage with advanced degradation of exposed roots.

a) Hazardous Tree

b) Immediate Removal

- Advanced, structural defects evident. Open cracks to codominant stem and branch unions evident.
- Previous branch and stem failures evident. Failure of remaining tree parts determined within 3 months 6 months, from time of inspection and assessment. Arboricultural works to be scheduled immediately to mitigate associated hazard and risk.
- Severed roots and soil upheaval evident indicating failure of root zone.
- Tree failure imminent within 12 months from time of inspection and assessment

Landscape Significance

Assesses a tree within the landscape and rates according to criteria taken from Morton (2006):

1. Significant

- The subject tree is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance; or
- The subject tree forms part of the curtilage of a Heritage Item (building / structure /artifact as defined under the LEP) and has a known or documented association with that item; or
- The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event; or
- The subject tree is scheduled as a Threatened Species or is a key indicator species of an Endangered Ecological Community as defined under the or Biodiversity Conservation Act 2016 (NSW) or The Environmental Protection and Biodiversity Conservation Act 1999 (Federal); or

- The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species; or
- The subject tree is a Remnant Tree, being a tree in existence prior to development of the area; or
- The subject tree has a very large live crown size exceeding 300m² with normal to dense foliage cover, is located in a visually prominent in the landscape, exhibits very good form and habit typical of the species and makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity; or
- The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance.

2. Very high

- The tree has a strong historical association with a heritage item (building/structure/artifact/garden etc) within or adjacent the property and/or
- Exemplifies a particular era or style of landscape design associated with the original development of the site; or
- The subject tree is listed on Council's Significant Tree Register; or
- The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link/ Wildlife Corridor or has known wildlife habitat value;
- The subject tree has a very large live crown size exceeding 200m²; a crown density exceeding 70% Crown Cover (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area.

3. High

- The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence; or
- The tree is a locally-indigenous species and representative of the original vegetation of the area; or
- The subject tree has a large live crown size exceeding 100m²; and
- The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (eg crown distortion/suppression) with a crown density of at least 70% Crown Cover (normal); and
- The subject tree is visible from the street and surrounding properties and makes a positive contribution to the visual character and the amenity of the area.

4. Moderate

- The subject tree has a medium live crown size exceeding 40m²; and
- The tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% Crown Cover (thinning to normal); and
- The tree makes a fair contribution to the visual character and amenity of the area; and
- The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms.
- The tree has no known or suspected historical association

5. Low

- The subject tree has a small live crown size of less than 40m² and can be replaced within the short term with new tree planting; or
- The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% Crown Cover (sparse); and
- The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area.

6. Very low

- The subject tree is listed as an Environment Weed Species in the relevant Local Government Area, being invasive, or a nuisance species.
- The subject tree is scheduled as exempt (not protected) under the provisions of the local Council's Tree Preservation Order due to its species, nuisance or position relative to buildings or other structures.

7. Insignificant

- The tree is a declared Noxious Weed under the Biosecurity Act (NSW) 2015 or identified as a priority weed within the local region.

Appendix D – Site Photographs



Plate 1 Above: Tree 10 – *Eucalyptus fibrosa* is dead with a very low retention value.

Plate 2 Below: Tree 47 – *Eucalyptus* sp is dead with a very low retention value.





Plate 3 Above: Tree 124 – *Pinus radiata* showing fair structure and poor health. This tree has an estimated life expectancy (ELE) of 5-15 years.

Plate 4 Below: Tree 140 – *Cinnamomum camphora* in poor health and structural condition. The tree has a very low landscape significance rating (LSR).





Plate 5 Above: Tree 72 – *Corymbia maculata* has a very high landscape significance rating (LSR) and high retention value.

Plate 6 Below: Tree 18 – *Eucalyptus saligna* showing a large canopy exceeding 200sqm. This tree has a very high landscape significance rating (LSR) and high retention value.

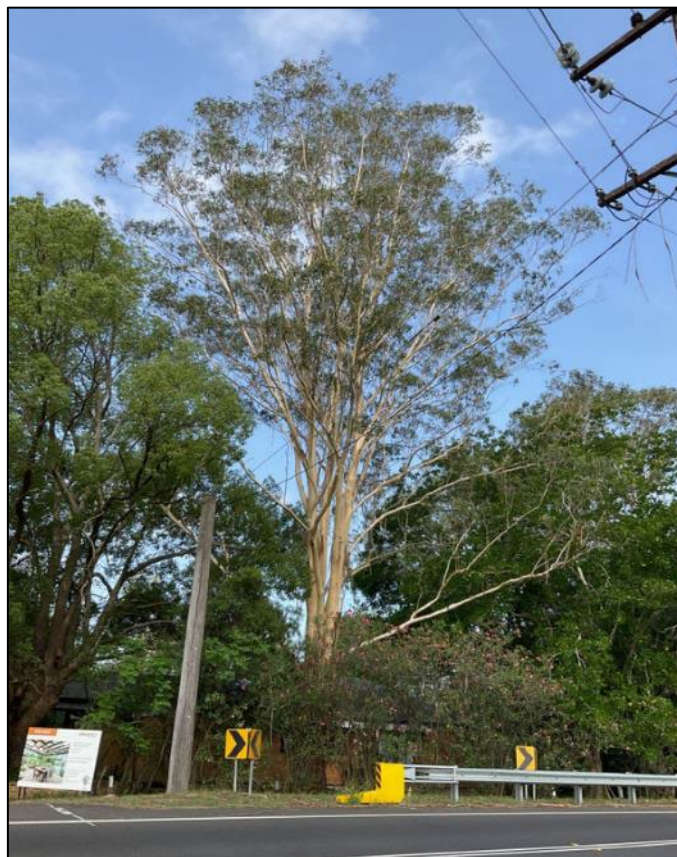




Plate 7 Above: Subject Site bushland.

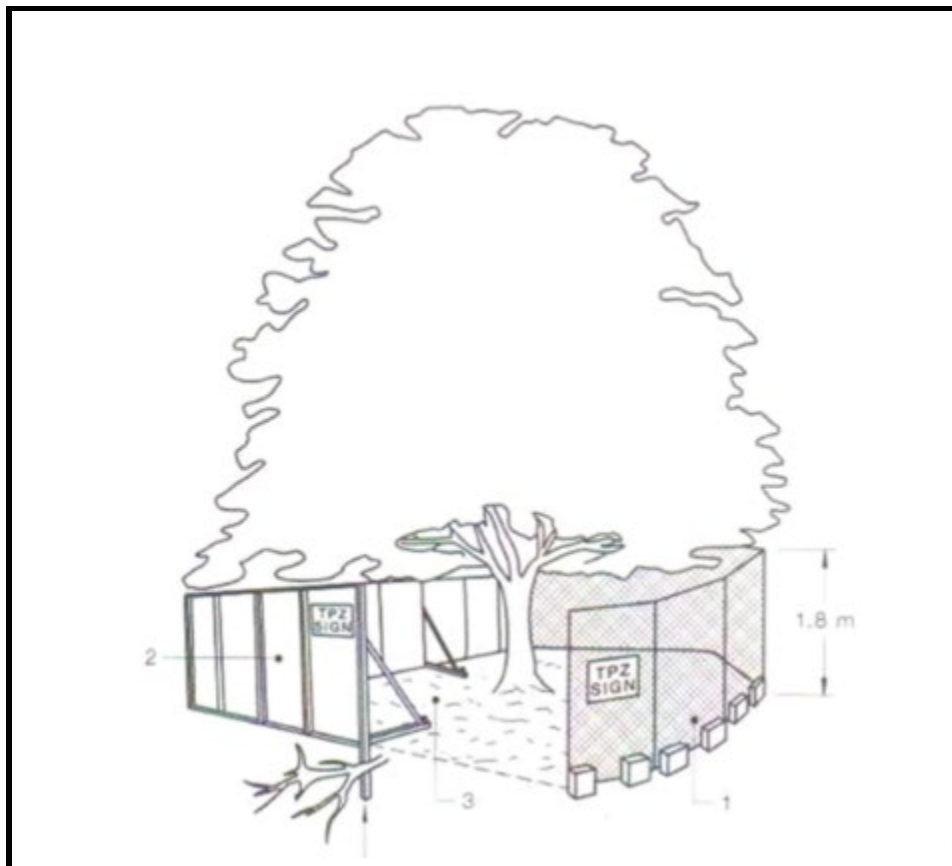
Plate 8 Below: Example of trees positioned on private properties.



Appendix E –Tree Protection Fencing and Ground Protection

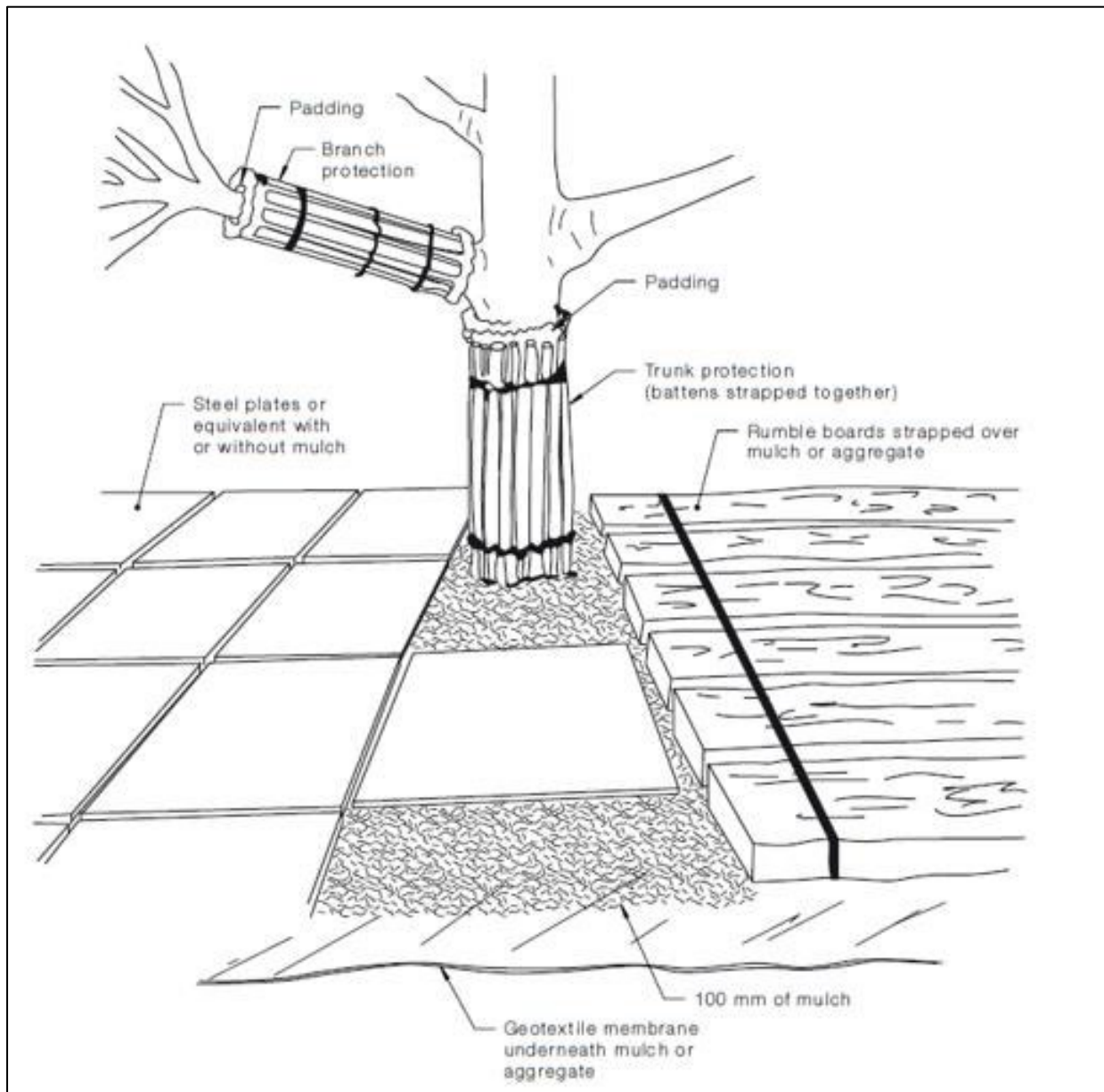
Example of tree protection fencing:

1. Fence off all trees noted for retention with 1.8m steel mesh fencing at the perimeter of the designated protection zone. Attach signs relating to the importance of tree protection and penalties for breaching tree protection orders to the fencing. If the area is large, install multiple signs.
2. Signs should state that this is a restricted area, no entry unless in the company of the arborist. Authorised access to the protected zone could be through a locked gate or via ladders
3. Mulching and semi-regular watering for established protection zones.



Ground Protection

If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose is to prevent root damage and soil compaction within the TPZ. Measures may include a permeable membrane such as geotextile beneath a layer a mulch or crushed rock below rumble boards as per the below diagram.



Notes:

1. For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to the trees, not nailed or screwed.
2. Rumble boards should be of suitable thickness to prevent compaction and root damage.