

ADVERTISED PLAN

Arboricultural Assessment and Report

Hanson Langwarrin Quarry Extension

Prepared for Hanson Quarries Pty. Ltd.

Prepared by Bruce Callander –
Senior Consulting Arborist
Tree Logic Pty. Ltd.

8 March 2023

Tree Logic Ref. 012747

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Contents

Objectives3

1 Summary3

2 Method5

3 Tree Permit Requirements6

4 Observations7

5 Tree Protection Zones10

6 Design review and Tree impact assessment11

7 Tree Protection guidelines14

8 Conclusion.16

Appendix 1: Tree Assessment Data: Hanson Langwarrin Quarry Extension.....19

Appendix 2: Tree Location Plan: Hanson Langwarrin Quarry Extension – Existing Conditions20

Appendix 2A: Design Review – TPZ Impact Plan: Hanson Langwarrin Quarry Expansion – Proposed21

Tree pictures22

Appendix 3: Arboricultural Descriptors (June 2018).....52

Appendix 4: Tree protection zones.....59

Disclaimer65

report_12747_Hanson Langwarrin Quarry Extension-

File No.	Version	Author	Issue date	Edits	Issued by.
012747	V1	Bruce Callander	8/03/2023	Preliminary tree report	BC

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Objectives

1.1 Tree Logic was engaged by Hanson Quarries to undertake an arboricultural assessment and prepare a preliminary arboricultural report and impact assessment for trees associated with proposed redevelopment of the southern section of 60 Valley Road, Langwarrin for expansion of the existing sand mine to the south of site.

The primary objectives of the arboricultural report include;

- Ascertain the species and origin of the subject remaining trees and provide information including dimensions, health, structural condition and the arboricultural value of the trees.
- Determine appropriate tree protection zone (TPZ) dimensions compliant with Australian Standard AS4970 'Protection of trees on development sites'
- Identify if trees are subject to permit and / or offset requirement under various planning overlays.
- Identify potential tree impacts to trees on adjacent land within 10 metres of the boundary associated with proposed drainage works around the future sand mine and offer recommendations regarding the management of trees, including any tree protection modification or additional requirements for trees required to be retained.

1 Summary

ADVERTISED PLAN

- 1.1 One hundred and twenty (120) tree features were assessed, including 114 individual trees and 6 groups of spreading invasive weeds comprised primarily of Coast Wattle and Coastal Tea-tree, all growing in the adjacent properties abutting the subject site.
- 1.2 Fourteen (14) different species were recorded comprising primarily indigenous species competing with woody weed species spreading along with several introduced exotic conifers. Refer to Section 4 for details of species distribution.
- 1.3 Each tree feature was attributed an arboricultural rating which reflects the retention value of the trees.
- Twenty nine (29) trees were attributed an arboricultural rating of Moderate B, being of typical size and condition for the species in this location and suitable and worthy of retention and protection.
 - Forty four (44) trees were attributed an arboricultural rating of Moderate C, being either young or semi-mature native specimens or maturing trees with accumulating deficiencies and defects that are trending towards becoming of Low Arboricultural value.
 - Thirty one (31) tree features were attributed an arboricultural rating of Low, displaying symptoms of decline and / or structural deficiencies or being a spreading woody weed species.
 - Sixteen trees were attributed a rating of Very Low due to being dead, defective or an invasive woody weeds.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

The site is generally highly disturbed or modified especially to the north and east of the site where fire access clearing and slashing has removed much of the native understory and somewhat neglected on site and to the west judging by the extent of weed invasion in areas. These modified conditions will have contributed to the generally lower arboricultural ratings than might normally be associated with a tree population of this size.

Refer to Table 3 in Section 4 for trees sorted by Arboricultural Rating.

- 1.4 The sites exist within the Frankston Local Government Area planning scheme. The site is zoned for Rural Conservation Zone - Schedule 2 (RCZ2).
- Bushfire Management Overlay (BMO) applies to the site as well as Environmental Significance Overlay - Schedule 1 (ESO1) which applies to parts of the subject site and parcels to the east and west. Under the ESO1 a permit is required to 'remove, destroy or lop any vegetation, including dead vegetation' native to Victoria.
 - Under City of Frankston Tree Protection Local Law No: 22, a permit is required to remove or damage trees with a basal trunk circumference of 110cm or more.
 - Native Vegetation - Clause 52.17 is applicable to ninety nine (99) native trees since each of the adjacent parcels are greater than 4,000 square metres in area. Permit and offset would be required for the removal of any indigenous trees.
 - Neighbour's trees should be appropriately protected to ensure they remain viable post construction.

Refer to Section 3 for trees sorted by Permit requirements.

- 1.5 At the time of preparing this impact assessment report plans for an expansion of the existing sand mines to the south of the site were provided for review including Site boundary, Drainage channels, Access tracks, Bunds, Pit contours and Rehabilitated Channel location (*Ricardo Energy, Environment & Planning*).

**ADVERTISED
PLAN**

- 1.6 Under the current design proposal
- All vegetation within the site is approved to be removed under planning exemptions for the mining and extractive industry.
 - The drainage alignment will impact the Tree Protection Zones (TPZs) of 23 trees by less than 10%. These trees should be sustainable without dramatic impact to ongoing condition.
 - The TPZs of 7 trees will have major TPZ impacts greater than 10% which may cause the trees to decline.
 - The drainage alignment will impact the Structural Root Zone (SRZ) of 14 trees which has the potential to cause tree decline and de-stabilise the tree, most likely resulting in tree death and / or failure.
 - Monterey Pine, Tree 68, is within the proposed access track and will need to be removed.
 - Seventy five (75) tree features can be sustained without any TPZ encroachment.

Refer to Section 6 for trees sorted by perceived TPZ encroachments and impacts.

2 Method

- 2.1 A site inspection was carried out on Tuesday, February 21st, 2023, during mild conditions by Bruce Callander, Senior Consultant Arborist (Dip Hort. Cert 5 Arb. NMIT, TRAQ trained and qualified) and Thiet Nguyen (Masters in Forestry, VALID risk assessment trained).
- 2.2 Tree locations were recorded on mobile field computers equipped with GIS software, property cadastral data, GPS and geo-referenced aerial imagery as well as using laser rangefinders to determine tree distance and height.
- 2.3 Observations were made from within the subject sit of the assessed trees to determine the species, age category, and condition with measurements taken to establish tree crown height (measured with a laser range finder and height meter) and crown width (paced) and trunk dimensions estimated at 1.4 metres above ground level and base. Tree canopy dimensions in four directions are also provided. Observations and estimates of tree dimensions and condition are based on over 25 years of combined experience of the tree inspectors.
- 2.4 Assessment details of individual trees are listed in Appendix 1 and a copy of the tree location plan can be seen in Appendix 2.
Descriptors used in the assessment can be seen in Appendix 3.
- 2.5 Photographs of trees and the environs were taken for further reference when preparing the report.
- 2.6 Each of the assessed trees was attributed an 'Arboricultural Rating'. The arboricultural rating correlates the combination of tree condition factors (health and structure) with tree amenity value. Definitions of arboricultural ratings can be seen in Appendix 3.
- 2.7 The assessed trees have been allocated tree protection zones (TPZ). The Australian Standard, AS 4970-2009, has been used as a guide in the allocation of TPZs for the assessed trees. This method provides a TPZ that addresses both the stability and growing requirements of a tree. TPZ distances are measured as a radius, from the centre of the trunk at (or near) ground level. All TPZ measurements for are provided in Appendix 1.
- 2.8 Documents reviewed:
- Planning Property reports for 34 Valley Road, 54 Valley Road, 60 Valley Road and 70 Valley Road, Langwarrin. Department of Planning & Community Development. (3/03/2023)
 - Rural Conservation Zone - Schedule 2 (RCZ2)
 - Bushfire Management Overlay (BMO)
 - Environmental Significance Overlay - Schedule 1 (ESO1)
 - Tree Protection Local Law No. 22-Fact sheet-Updated 4 July 2018 (2)
 - Gippsland Plains Ecological Vegetation Class (EVC) - 48_Heathy Woodland

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

3 Tree Permit Requirements

- 3.1 The sites exist within the Frankston Local Government Area and planning scheme. The site is zoned as Rural Conservation Zone - Schedule 2 (RCZ2)
- 3.2 Environmental Significance Overlay - Schedule 1 (ESO1) applies to parts of the subject site and properties to the east and west.
 - Under ESO1 a permit is not required to remove, destroy, prune or lop vegetation where
 - The vegetation is not native.
 - The pruning or lopping of limbs is less than one-third (1/3rd) of the crown of the tree.
 - The vegetation is an environmental weed specified in Table 2 to this schedule including
 - *Acacia longifolia* subsp. *Sophorae* (Coast Wattle), *Leptospermum laevigatum* (Coast Tea-tree), *Pinus radiata* (Monterey Pine) and *Pittosporum undulatum* (Sweet Pittosporum) all being present on site.
- 3.3 Tree Protection Local Law No. 22 is applicable to all trees with a basal trunk circumference of 110cm or greater.
- 3.4 Native Vegetation - Clause 52.17 is applicable to ninety nine (99) native trees since each of the adjacent parcels are greater than 4,000 square metres in area. Clause 52.17 will trigger additional permit and offset requirements to the removal of naturally occurring trees that are native to Victoria (indigenous trees) or where TPZ encroachment exceeds 10%.
- 3.5 Refer to Table 1 for tree permit requirements.

Table 1: Permit requirement	Count	Tree numbers
CoF Local Law No2 (CoF LL)	24	1, 2, 3, 5, 9, 10, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 28, 32, 35, 37, 38, 40, 114
CoF LL Exempt – Undersize	15	6, 7, 11, 13, 21, 26, 27, 29, 30, 31, 33, 36, 39, 69, 71
CoF LL Exempt Undersize / Weed	7	4, 8, 12, 34, 68, 70, Grp 2
CoF LL and EMO	38	42, 43, 44, 45, 46, 48, 54, 56, 57, 61, 63, 65, 67, 73, 75, 76, 77, 78, 85, 89, 90, 91, 92, 93, 95, 98, 99, 100, 102, 104, 106, 107, 108, 109, 110, 111, 112, 113
ESO1 Permit requ'd (Not CoF LL)	23	49, 50, 51, 52, 53, 58, 59, 62, 64, 66, 74, 79, 80, 81, 82, 83, 84, 87, 88, 94, 96, 101, 103
ESO1_Exempt weed	13	41, 47, 55, 60, 72, 86, 97, 105, Grp 1, Grp 4, Grp 3, Grp 5, Grp 6
Total	120	
Clause 52.17	99	1, 2, 3, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 37, 38, 39, 40, 42, 43, 44, 45, 46, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 67, 69, 71, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 98, 99, 100, 101, 102, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114

- 3.6 Bushfire Management Overlay (BMO) applies to the subject sites as well but does not confer any specific or additional tree controls other than necessary access and clearances being maintained for fire-fighting purposes.
- 3.7 Since all of the trees assessed are in adjoining land under third party ownership, there is a requirement to ensure trees are adequately protected to ensure they remain viable in conjunction with any site redevelopment. This must be considered in conjunction with the Impact Assessment results in Section 6 of this report.

ADVERTISED PLAN

4 Observations

- 4.1 The tree study area comprises trees within 10 metres of the boundary of 60 Valley Road, a vacant battle axe shaped allotment. The site previously had a residential dwelling, sheds, tennis court and associated access tracks and paths.



Plate 1. Aerial view of the subject site indicated by red boundary and the adjacent properties (Nearmap aerial imagery – dated 15/2/2023). Green circles indicate assessed trees.

- 4.2 The site is ostensibly flat with a minor fall from the north west corner to the south-east. There were no creeks or natural drainage lines observed within the vicinity of the study area.

4.3 **Tree population**

One hundred and twenty (120) tree features were recorded in total comprising 114 individual trees and 6 groups of woody weed trees spreading in neighbouring land.

- 4.4 Fourteen (14) different species.

- Ninety nine (99) of the trees were of species that are indigenous to the locale and are consistent with the local Ecological Vegetation Class (EVC) in the Gippsland Plains Region of Victoria, being EVC 48_Heathy Woodland.
Refer to Table 2 for species and origins recorded.

**ADVERTISED
PLAN**

Table 2: Botanic name	Common Name	Origin	Count
<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Indigenous	35
<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Indigenous	34
<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Australian native (Weed)	15 (Inc 5 groups)
<i>Eucalyptus ovata</i>	Swamp Gum	Indigenous	8
<i>Eucalyptus sp.</i>	Gum Tree (Dead)	Indigenous	8
<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Indigenous	7
<i>Exocarpus cupressiformis</i>	Cherry Ballart	Indigenous	4
<i>Pinus radiata</i>	Monterey Pine	Exotic conifer (Weed)	3
<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	1
<i>Acacia pycnantha</i>	Golden Wattle	Indigenous	1
<i>Allocasuarina littoralis</i>	Black She-oak	Indigenous	1
<i>Leptospermum laevigatum</i>	Coast Tea-tree	Victorian native (Weed)	1
<i>Pittosporum undulatum</i>	Sweet Pittosporum	Victorian native (Weed)	1
<i>Acacia longifolia var. sophorae</i> , <i>Kunzea ericoides</i> , <i>Leptospermum laevigatum</i>	Coast Wattle, Burgan, Coast Tea-tree	Victorian Australian native (Weed)	1 Group

4.5 Tree Origin

Based on observations of species diversity, age class and general spatial arrangement it is apparent that the indigenous tree species are naturally occurring and subject to Clause 52.17 along with other permit requirement identified in Section 3. These were interspersed with several introduced specimens of exotic Conifers or spreading self-sown woody weed trees.

4.6 Tree health was assessed based on foliage colour, size and density as well as shoot initiation and elongation where possible.

- 88 trees displayed Fair or typical health condition.
- 14 trees displayed Fair to Poor health indicated by dieback or reduced foliage density.
- 1 tree displayed Poor health and 17 were dead.

4.7 Tree structure was assessed for structural defects and deficiencies, likelihood of failures and risk to potential targets.

- 60 trees displayed Fair and acceptable structural condition.
- 36 trees displayed Fair to Poor Structural condition, being either multi-stemmed, having crown asymmetry, wounds from previous limb failures over-extended limbs.
- 10 trees displayed Poor Structure having dead or failed main leaders, evidence of decay or being dead.
- 4 trees displayed Very Poor Structure, being dead and decayed with potential to split and fail. **Tree 38 requires urgent pruning** to reduce the split over-extended limb extending to south over subject site.

4.8 Arboricultural Rating

The assessed trees were attributed an arboricultural rating. This rating relates to the combination of tree condition factors, including health and structure (arboricultural merit), and also conveys an amenity value.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

It should be noted that the arboricultural rating is different to the conservation / ecological values placed on trees by other professions.

ADVERTISED PLAN

Refer to Table 3 for tree numbers sorted by Arboricultural rating

Table 3: Arboricultural rating	Total	Tree Numbers
Moderate A	29	3, 6, 10, 16, 17, 22, 27, 28, 31, 37, 43, 56, 57, 66, 77, 78, 85, 89, 90, 91, 93, 95, 102, 104, 107, 108, 110, 111, 112
Moderate C	44	1, 7, 14, 15, 20, 23, 26, 32, 33, 34, 36, 38, 44, 45, 46, 49, 50, 51, 52, 53, 55, 58, 59, 62, 64, 67, 71, 74, 75, 76, 79, 80, 81, 82, 83, 84, 87, 88, 92, 94, 101, 106, 109, 113
Low	31	2, 4, 5, 8, 11, 12, 19, 21, 24, 25, 29, 30, 39, 40, 41, 42, 47, 68, 70, 72, 86, 97, 98, 105, 114, Grp 1, Grp 4, Grp 3, Grp 2, Grp 5, Grp 6
Very Low	16	9, 13, 18, 35, 48, 54, 60, 61, 63, 65, 69, 73, 96, 99, 100, 103
Total	120	

- Trees rated Moderate B are generally typical of the species growing in the area under prevailing conditions and are deemed suitable to retain in conjunction with development where possible.
- Trees rated Moderate C are either established smaller trees of Fair condition or maturing trees that might be accumulating deficiencies and tending towards becoming of Low arboricultural value.
- Trees attributed an arboricultural rating of Low are generally not considered worthy of being a constraint on reasonable design intent and outcome delivery due to either health and / or structural deficiencies, being a suckering specimen or being woody weed species.
- Trees attributed an arboricultural rating of Very Low are generally considered unsuitable to retain or should be removed for environmental and / or safety reasons.

4.9 In summary,

- All trees within the subject site are designated for removal to facilitate expansion of the existing sand mine to the south.
- All trees within 10 metres of the boundaries to the north, east and west were required to be assessed to comply with a request for further information from Frankston Council planning department.
- 120 tree features were inspected, plotted and assessed. The tree attributes were recorded and are summarized above.
- Various tree controls apply to the subject trees based on tree dimensions and species. These are identified in Table 1 at Section 3.
- As part of the mine expansion new drainage channels, access tracks and bunds are required to be constructed which extend up to the boundaries and may affect tree condition. An impact assessment is provided in Section 6.

Refer to Appendix 1 for individual tree data, Appendix 2 for Tree location plan sorted by Arboricultural rating and Appendix 3 for definitions of arboricultural ratings.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

5 Tree Protection Zones

The Tree Protection Zones (TPZs) provided for each tree in the Tree Assessment Table in Appendix 1 are calculated using the formula provided in the Australian Standard AS4970 where the Radial TPZ = Trunk diameter (DBH) measured at 1.4m above grade and multiplied by 12. TPZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The method for calculating, applying and managing the tree protection zone is described in Appendix 4.

The TPZ forms an area around a tree or group of trees that addresses both the stability and growing requirements of a tree in which excavation or filling vehicle movements, installation of underground services and other construction activities are either excluded or controlled.

Minor encroachment, up to 10% of the TPZ area, is generally permissible provided encroachment is compensated for by recruitment of an equal area contiguous with the TPZ. Encroachment greater than 10% is considered major encroachment under AS4970 and is only permissible if it can be demonstrated that after such encroachment the tree would remain viable. Refer to Figure 2A and 2B.

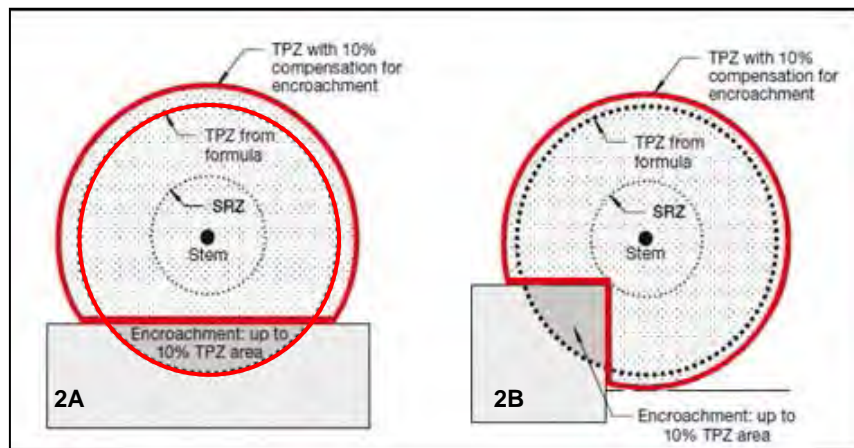


Figure 2: 2A & 2B - Examples of minor encroachment into a TPZ.

Extract from: AS4970-2009, Appendix D, pg. 30 of 32

The Structural Root Zone (SRZ) provided for each tree has been calculated using the method provided in AS4970. The SRZ is the area in which the larger woody roots required for tree stability are found close to the trunk and which then generally taper rapidly. This is the minimum area recommended to maintain tree stability but does not reflect the area required to sustain tree health. No works should occur within the SRZ radius as tree stability could be compromised.

The TPZs for all trees to be retained must be transferred and overlaid on all design plans.

All TPZ measurements are provided in the tree assessment data in Appendix 1 and displayed on the tree location plan in Appendix 2. See Appendix 4 for TPZ establishment guidelines.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

ADVERTISED PLAN

6 Design review and Tree impact assessment

The pre – development arboricultural inspection report provides planners and designers with information on whether trees are worthy or not of being a constraint on the proposed repurposing of the site.

It also provides a basis on which to identify when and where potential impacts to trees will occur from various design elements and evaluates the possible severity of the impact during the design phase of any site redevelopment.

Trees grow in a delicate balance with their environment and any changes to that balance must be minimised if a tree is to remain in a healthy state and fulfil its potential.

It is rarely possible to repair stressed and injured trees, so damage needs to be avoided during all stages of development and construction.

Tree protection cannot be achieved without a proactive approach. The planning and design stages of any construction project can be instrumental and determine the success of tree preservation.

The hierarchy of principles for tree protection are:

- Avoid damage to the subject trees
- Minimise damage to the subject trees
- Replace the subject trees and improve the landscape (as a last resort).

**ADVERTISED
PLAN**

At the time of preparing this Tree Impact Assessment Report, plans for an expansion of the existing sand mine to the south of the site were provided for review including Site boundary, Drainage channels, Access tracks, Bunds, Pit contours and Rehabilitated Channel location (*Ricardo Energy, Environment & Planning*).

Under the current design proposal the drainage channel is shown to extend to the northern and eastern boundaries. An access track will extend to the western boundary and follow the drainage line further inside the site along the north and east boundary. Bunds are indicated to be built up between the access tracks and the new pit excavation.

- 6.1 All vegetation within the site is indicated to be removed under planning exemptions for the mining and extractive industry.
- 6.2 The drainage channel and access track alignment will impact the Tree Protection Zones (TPZs) of 23 trees by less than 10%.
- These trees would be sustainable without discernible impact to ongoing condition. As such no permit would apply for works to proceed, providing boundary fences are maintained as an effective tree protection exclusion zone.
- 6.3 The drainage channel and / or access track will encroach more than 10% of the TPZ of 7 trees.
- These trees are at risk of tree decline due to root loss from excavation for drainage channels or road base.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

- 6.4 The SRZ of 14 trees will be affected by excavation for drainage channels and / or road base for the access tracks.
 - These trees are at risk of dying and becoming unstable due to loss of major supporting and water conducting roots.
- 6.5 Monterey Pine, Tree 68 is within the alignment of the access track on the western boundary and will need to be removed.
- 6.6 Seventy five (75) tree features can be sustained without any TPZ encroachment.

Table 4: Tree numbers sorted by perceived impacts and permit requirements

TPZ impact	Count	Tree numbers	comment
None	75	2, 3, 6, 8, 9, 10, 11, 13, 14, 21, 23, 24, 26, 27, 28, 30, 32, 33, 35, 36, 41, 44, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 66, 67, 76, 78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 94, 95, 96, 97, 98, 100, 101, 102, 103, 105, 106, 109, 110, 112, 113, 114, Grp 1, Grp 4, Grp 3, Grp 2, Grp 5, Grp 6	Sustain and protect with maintaining boundary fences as TPZ exclusion zones
TPZ < +/-10%	23	1, 7, 12, 15, 17, 22, 29, 31, 37, 40, 42, 46, 65, 69, 71, 75, 77, 91, 92, 99, 104, 107, 111	Sustain and protect with maintaining boundary fences as TPZ exclusion zones
Major TPZ incursion (>10%)	7	16, 19, 38, 56, 57, 93, 108	At risk of decline from root loss. Steepen drainage channel and move away from boundary. Raise access road base.
Basement in SRZ	14	4, 5, 18, 20, 25, 34, 39, 43, 45, 70, 72, 73, 74, 79	Tree at risk of decline and failure. Steepen & deepen drainage, move away from boundary
Lost –in access track	1	68	
Total	9		

- 6.7 Since all of the trees assessed are in adjoining land under third party ownership, there is a requirement to ensure trees are adequately protected to ensure they remain viable in conjunction with any site redevelopment. If this cannot be achieved under the current design then design modifications may be required to reduce the potential excavation within the TPZs of affected trees or negotiations with the landowners to remove and replace the affected trees may be required, pending appropriate permits being obtained. This must be considered in conjunction with the permit requirements for each of the affected trees identified in Table 1 in Section 3 of this report.
- 6.8 As identified in Table 4, Tree 68 will need to be removed. The tree exists between the current quarry and the proposed expansion, presumably on Hanson land. There is no permit required for the removal of this tree.
- 6.9 Of the 14 trees subject to SRZ impacts and 7 trees subject to Major TPZ encroachment;
 - Four (4) are listed weed species and one (1) is a dead gum tree (less than 40cm DBH).
 - Negotiating the removal of these trees could be pursued on the basis of sound environmental reasons.
 - A permit would be required to remove sixteen (16) of the trees, being Trees 5, 16, 18, 19, 20, 25, 38, 43, 45, 56, 57, 73, 74, 79, 93 and 108.

Consideration should therefore be given to reviewing the design with the view to minimizing the perceived impacts to these nine trees. Options to consider may include;

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

- Making the drainage channel potentially narrower and stepping it away from the property boundary to reduce TPZ encroachment. The side wall of the drain abutting the access track could be increased in height to increase the drain capacity to make up for the reduced capacity from narrowing the trench.
 - Making the swale walls vertical (rather than battered) where they intersect with a TPZ and stepping away from property boundary.
 - Swapping access track for drainage swale along the northern and eastern boundary so overland flows pass over access track then into the swale adjacent to bunds.
 - Constructing access track and building sub-base layers up from existing soil grade after scrape of top 100mm of vegetative material and topsoil to avoid damage to surface oriented tree roots.
- 6.10 All other tree impacts are considered to be minor or none at all and 98 trees can be sustained with appropriate protection provided by the boundary fence or temporary fencing erected along the boundary to prevent any disturbance extending into adjacent property or further into the TPZs.
- 6.11 **Tree 38 requires urgent pruning** to reduce the split over-extended limb extending to south over subject site.

Refer to maps in Appendix 2B showing design proposal and TPZ incursions.

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

7 Tree Protection guidelines

- 7.1 Any trees that are to be retained in the vicinity of any proposed works will require Tree Protection Zones to be established prior to commencing any works onsite including demolition, bulk earthworks, trenching, construction, landscaping activity, delivery and storage of materials or placement of site sheds.
- 7.2 Tree protection must be incorporated into the design and appropriate construction controls, fencing and management practices must be implemented prior to commencing any construction related activity, including demolition, bulk earthworks construction of gantries, etc.
- 7.3 The tree protection zones for all trees to be retained within the site must be clearly shown on all design drawings and plans with appropriate notations so that all staff and contractors are aware of the responsibility to protect trees throughout the design, development and delivery of the project.
- 7.4 The TPZ fencing must be in the form of either temporary fencing panels with concrete block feet and locked together, water filled barriers with locking pins installed or similar exclusion fencing options. Refer to Figure 1 for fencing example. TPZ fencing must be sufficiently robust to withstand knocks and bumps from plant and machinery, delivery vehicles, storage of materials and dumping of spoil.
- 7.5 Appropriate signage stating 'Tree protection Zone- No access' is to be fixed to the fencing to alert people as to importance of the tree protection zone. Refer to Figure 1 for signage example.



ADVERTISED PLAN



Figure 1. Above left - Example of TPZ fencing above right -Example of TPZ signage.

- 7.6 Regardless of which TPZ exclusion fencing option is selected, the TPZ fence must effectively provide an exclusion barrier to entry to the TPZ, prevent vehicles, plant or equipment traversing the TPZ and dumping or stockpiling of spoil or materials. It must be sturdy and withstand winds and construction impacts. The protection fence may only be moved with approval of the project arborist or relevant authority. Other root zone protection methods must be incorporated if the TPZ area needs to be entered or traversed.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

- 7.7 The following activities must be excluded from or controlled within the Tree Protection Zones (TPZ) unless otherwise approved by the relevant authority or the Project Arborist.
- Machine excavation (including trenching) for continuous strip footings or installation of underground services or road base
 - Alteration of soil levels including placement of fill
 - Storage of wastes or materials (including fuels, oils or chemicals)
 - Preparation of or cleaning of any cement products
 - Storage and or parking of vehicles or any plant/machinery within TPZ
 - Washing down of equipment
 - Installation of utilities
 - Physical damage of any kind to the tree (including direct attachment of anything into the tree)
 - Soil cultivation
- 7.8 No form of excavation for trenching for installation of underground services is permitted within the nominated TPZ areas for any retained trees without prior consultation with the council and / or site arborist, to avoid severing roots that could be vital to the stability and continued sustainability of the retained trees.
- Trenching for the installation of any and all underground services must be designed to avoid encroaching the TPZ of any retained trees.
 - If it is unavoidable that an underground service must pass through a defined TPZ, the service must be installed via directional boring at a minimum depth of 750mm to the top of the bore head.
All entry and exit points for the boring must be located beyond the TPZ radius.
 - Lubricants or waste water from the boring process must not be permitted to enter or contaminate the soils within the TPZ.
- 7.9 Temporary facilities and site sheds may be established on existing hard stand if already present within a TPZ providing there is no physical impacts to the trees and no requirement to penetrate the surface within the TPZ for installation of footings or underground services. Access / egress to these facilities must not encroach or compact the native soil within the TPZ.
- Refer to Appendix 1 for all tree data, Appendix 2 for tree location and TPZ maps and Appendix 3 for Tree Descriptors.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any

8 Conclusion.

- 8.1 In summary, one hundred and twenty (120) tree features were assessed within 10 metres of the property boundary in neighbouring properties to the north, east and west. Refer to Plate 1 at Section 4.1. The features include 114 individual trees and 6 groups of invasive weeds.
- 8.2 Fourteen (14) different species were identified comprising primarily tree species that are indigenous to the site and the local Ecological Vegetation Class. The remainder of vegetation assessed was generally self-sown invasive weed species.
Refer to Table 2 in Section 4.4 for indication of species diversity and origin.
- 8.3 Specific tree protection and permit requirements apply to the indigenous trees under Environmental Overlays, Local Law No 22 and Clause 52.17 as well as a requirement to avoid or minimise potentially impacting trees under third party ownership.
- Trees in adjacent properties require appropriate tree protection measures to be implemented to ensure the trees remain viable post construction works.

Refer to Section 3 and column titled Permit in tree assessment data tables in Appendix 1.

- 8.4 Approximately 2/3 of the trees displayed typical health and structural condition and were attributed an arboricultural rating of Moderate B or Moderate C.
- The remainder of trees generally displayed diminished health and structural conditions considered to be below typical for the species and age growing in this area under prevailing conditions.
 - **Tree 38 requires urgent pruning** to reduce the split over-extended limb extending to south over subject site.
 - Refer to Sections 4.6 to 4.8 and Table 3 - Section 4.8 for tree numbers sorted by arboricultural rating.

- 8.5 The preliminary tree impact assessment report provides information on the tree population associated with the site, its arboricultural (retention) value and the appropriate tree protection zones required to preserve trees in conjunction with future site redevelopment.
At the time of preparing this impact assessment report plans for an expansion of the existing sand mines to the south of the site were provided for review including Site boundary, Drainage channels, Access tracks, Bunds, Pit contours and Rehabilitated Channel location (*Ricardo Energy, Environment & Planning*).

The design proposal indicates a drainage channel will extend to the northern and eastern boundaries. An access track will extend to the western boundary and follow the inside of the drainage line along the north and east boundary.

Under the current design;

- All vegetation within the site is indicated to be removed under planning exemptions for the mining and extractive industry.
- Seventy five (75) tree features can be sustained without any TPZ encroachment.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

- The drainage channel and access track alignment will impact the Tree Protection Zones (TPZs) of 23 trees by less than 10%.
 - The drainage channel and / or access track will encroach more than 10% of the TPZ of 7 trees.
 - The SRZ of 14 trees will be affected by excavation for drainage channels and / or road base for the access tracks.
 - Monterey Pine, Tree 68 is within the alignment of the access track on the western boundary and will need to be removed.
 - Refer to Table 4 and Section 6 for details of design review and tree impact assessments.
- 8.6 Of the 21 trees that are likely to sustain major TPZ or SRZ encroachment, five (5) trees are exempt from permit and their removal could be negotiated on the basis of sound environmental reasons.
- A permit would be required to remove sixteen (16) of the trees, being Trees 5, 16, 18, 19, 20, 25, 38, 43, 45, 56, 57, 73, 74, 79, 93 and 108.
 - Consideration should be given to reviewing the design with the view to minimizing the perceived impacts to these nine trees. Options are discussed at Section 6.9.
- 8.7 Any trees that are to be retained in the vicinity of any proposed works will require Tree Protection Zones to be established prior to commencing any works onsite including bulk earthworks, trenching, construction, landscaping activity, delivery and storage of materials or placement of site sheds.
- 8.8 The tree protection zones for all trees to be retained on adjacent properties must be clearly shown on all design drawings and plans with appropriate notations so that all staff and contractors are aware of the responsibility to protect trees throughout the design, development and delivery of the project.
- 8.9 Tree condition can change quickly in response to environmental conditions or altered landscape conditions. Retained trees should be re-inspected on a 3-5 year basis or following any locally damaging weather events and appropriate remedial works undertaken as required.

I am available to answer any questions arising from this report.

No part of this report is to be reproduced unless in full.

Signed



Bruce Callander

Senior Consultant Arborist

TreeLogic P/L

E: bruce.callander@treeologic.com.au

T: 03 9870 7700 Mob: 0425 872 007

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

References and bibliography:

Australian Standard (4970-2009) Protection of Trees on development sites. Standards Australia, Sydney NSW Australia

Harris, R.W, Clark, J.R. & Matheny, N.P. (2004), *Arboriculture: Integrated Management of Landscape trees, shrubs and vines*, Prentice Hall, New Jersey.

Clark, J.R. & Matheny, N.P (1998), *Trees and Development: A technical guide to preservation of trees during land development*. ISA, Champaign, Illinois.

Standards Australia (2007), Australian Standard (4373-2007) - Pruning of Amenity trees, Standards Australia, Homebush.

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Appendix 1: Tree Assessment Data: Hanson Langwarrin Quarry Extension

Refer to following 3 pages

Key: DBH = Diameter measured in centimetres at breast height (1.4m up trunk) unless otherwise indicated.

Arb. Rating = Arboricultural Rating. ULE = Useful Life Expectancy.

TPZ = Tree protection zone in radial metres. TPZ radius applies from centre of trunk.

SRZ = Structural root zone in radial metres. ULE = Useful Life Expectancy (Estimated)

Definition of the descriptor categories used in the assessment can be seen in Appendix 3.

**ADVERTISED
PLAN**

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

treeid	species	comm_name	age_class	origin_typ	dbh_cm	base_circ	height_m	width	n	s	e	w	health	structure	arb_rating	ule_yrs	comments	tpz_rad_m	srz_rad_m	CoF	Local Law	Impact	chsr_pct	chpa_pct	chpa_name	chpa_val	chpa_ovl
1	<i>Eucalyptus ovata</i>	Swamp Gum	Maturing	Indigenous	40	157	9	7	2	3	3	4	Fair	Fair to Poor	Mod.C	11-20 y	Abnormal lean, incipient decay, past limb failure.	4.8	2.5	CoF LL	TPZ	11.7%	0.04%	Channel B - 13.0%	BMO		
2	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	33 (est.)	151	8	9	1	1	7	2	Dead	Poor	Low	<1 y	Deadwood >50mm, trunk wounds, partly suppressed - crown bias west.	4	2.4	CoF LL	NA	0%	0%	None	BMO		
3	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	32	123	9	8	1	6	1	4	Fair	Fair	Mod.B	21-40 y	Crown bias sw.	3.8	2.2	CoF LL	TPZ	11.7%	0.04%	Channel B - 13.0%	BMO		
4	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Semi-mature	Victorian native	7	31	5	5	2	3	2	3	Fair	Fair	Low	6-10 y		2	1.5	Under-size weed	SRZ	15.9%	0%	Channel B - 26.03%	BMO		
5	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	34 (est.)	126	7	5	2	2	2	2	Dead	Poor	Low	<1 y	Lost main leader. Recently died.	4.1	2.3	CoF LL	SRZ	26.0%	0%	None	BMO		
6	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	20	63	10	3	1	1	3	0	Fair	Fair	Mod.B	21-40 y		2.4	1.7	Under-size	NA	0%	0%	None	BMO		
7	<i>Eucalyptus ovata</i>	Swamp Gum	Early-mature	Indigenous	22	94	9	3	1	2	1	2	Fair	Fair to Poor	Mod.C	11-20 y	Lost main leader.	2.6	2	Under-size	TPZ	5.8%	0%	Channel B - 5.78%	BMO		
8	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Maturing	Australian native	28	91	5	7	2	3	3	3	Good	Fair to Poor	Low	6-10 y	Excess end weight, crown bias sw. Woody weed sp.	3.4	2	Under-size weed	NA	0%	0%	None	BMO		
9	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	47 (est.)	157	6	3	1	1	1	1	Fair to Poor	Very Poor	Very Low	1-5 y	Epicormic shoots, stump re-sprout.	5.6	2.5	CoF LL	NA	0%	0%	None	BMO		
10	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	47	157	9	11	1	5	6	5	Fair	Fair	Mod.B	21-40 y	Partly suppressed - crown bias sth.	5.6	2.5	CoF LL	NA	0%	0%	None	BMO		
11	<i>Eucalyptus ovata</i>	Swamp Gum	Semi-mature	Indigenous	20	82	6	7	2	5	2	2	Fair	Fair to Poor	Low	11-20 y	Abnormal lean, lost main leader.	2.4	1.9	Under-size	NA	0%	0%	None	BMO		
12	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	15	72	7	4	3	1	2	2	Fair to Poor	Poor	Low	6-10 y	Incipient decay, partly suppressed - crown bias rnh. Woody weed sp.	2	1.8	Under-size weed	TPZ	1.0%	0%	Channel B - 1.01%	BMO		
13	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	25	104	4	2	1	1	0	0	Dead	Very Poor	Very Low	<1 y		3	2.1	Under-size	NA	0%	0%	None	BMO		
14	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	30	116	10	8	2	3	5	3	Fair	Fair	Mod.C	11-20 y		3.6	2.2	CoF LL	NA	0%	0%	None	BMO		
15	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	45	220	10	8	3	4	6	3	Fair to Poor	Fair to Poor	Mod.C	11-20 y	Basal wounds, minor dieback, crown bias se.	5.4	2.8	CoF LL	TPZ	12.8%	0%	Channel B - 12.81%	BMO		
16	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	47	173	9	8	2	5	6	4	Fair	Fair	Mod.B	11-20 y	Partly suppressed - crown bias sth.	5.6	2.6	CoF LL	TPZ-Major	19.2%	0%	Channel B - 19.24%	BMO		
17	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	50	189	15	8	6	2	3	2	Fair	Fair	Mod.B	21-40 y		6	2.7	CoF LL	TPZ	4.8%	0%	Channel B - 4.82%	BMO		
18	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	34	119	8	4	0	2	1	2	Dead	Poor	Very Low	<1 y		4.1	2.2	CoF LL	SRZ	27.7%	0%	Channel B - 27.71%	BMO		
19	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	60,55	251	10	13	5	5	6	7	Fair to Poor	Fair to Poor	Low	11-20 y	Tip dieback. Main leader dead.	9.8	3	CoF LL	TPZ-Major	28.1%	0%	Channel B - 20.15% / Access track 7.4%	BMO		
20	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	37	126	6	11	6	5	4	4	Fair	Fair to Poor	Mod.C	11-20 y	Partly suppressed - crown bias, over-extended limbs developing. Sth.	4.4	2.3	CoF LL	SRZ	25.9%	0%	Channel B - 25.86%	BMO		
21	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	23	91	6	5	2	3	2	2	Fair	Fair to Poor	Low	11-20 y	Lost main leader.	2.8	2	Under-size	NA	0%	0%	None	BMO		
22	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Maturing	Indigenous	60	217	12	12	5	7	5	5	Fair	Fair	Mod.B	21-40 y		7.2	2.8	CoF LL	TPZ	10.1%	0%	Channel B - 10.12%	BMO		
23	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Maturing	Indigenous	45	170	11	7	4	2	3	4	Fair	Fair to Poor	Mod.C	11-20 y	Tip dieback, trunk wounds.	5.4	2.6	CoF LL	NA	0%	0%	None	BMO		
24	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	40 (est.)	135	6	7	1	6	4	3	Fair to Poor	Poor	Low	6-10 y	Lost main leader, crown bias sth.	4.8	2.3	CoF LL	NA	0%	0%	None	BMO		
25	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	44	151	11	3	1	1	1	1	Dead	Poor	Low	<1 y		5.3	2.4	CoF LL	SRZ	30.4%	0%	Channel B - 30.44%	BMO		
26	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	21	88	6	6	0	7	3	2	Fair	Fair to Poor	Mod.C	11-20 y	Leaning trunk, crown bias sth.	2.5	1.9	Under-size	NA	0%	0%	None	BMO		
27	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	22	88	8	5	2	2	3	2	Fair	Fair	Mod.B	21-40 y		2.6	1.9	Under-size	NA	0%	0%	None	BMO		
28	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	43,40,37,35	298	14	14	4	4	7	7	Fair to Poor	Fair	Mod.B	21-40 y	Multi-stemmed, over-extended limbs developing.	9.3	3.2	CoF LL	NA	0%	0%	None	BMO		
29	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	28	110	9	6	2	5	1	3	Fair to Poor	Fair to Poor	Low	6-10 y	Declining, dieback, foliage sparse, partly suppressed - crown bias sw.	3.4	2.1	Under-size	TPZ	10.8%	0%	Channel B - 10.77%	BMO		
30	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	29	110	4	11	1	10	0	3	Fair	Poor	Low	6-10 y	Abnormal lean, leaning trunk. Sth.	3.5	2.1	Under-size	NA	0%	0%	None	BMO		
31	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	23	94	8	6	3	3	2	2	Fair	Fair	Mod.B	21-40 y		2.8	2	Under-size	TPZ	0.4%	0%	Channel B - 0.38%	BMO		
32	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Early-mature	Indigenous	22	116	7	6	1	3	3	4	Fair to Poor	Fair to Poor	Mod.C	11-20 y	Main leader dead, partly suppressed - crown bias S & E.	2.6	2.2	CoF LL	NA	0%	0%	None	BMO		
33	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	23	101	9	7	1	3	6	1	Fair	Fair to Poor	Mod.C	11-20 y	Abnormal lean. To east.	2.8	2.1	Under-size	NA	0%	0%	None	BMO		
34	<i>Pinus radiata</i>	Monterey Pine	Maturing	Exotic conifer	58	204	21	11	2	4	7	4	Fair	Fair	Mod.C	6-10 y	Woody weed sp	7	2.8	CoF LL, Exempt weed	SRZ	40.8%	0%	Channel B - 29.24% / Access track 10.2%	BMO		
35	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	45,40	198	10	12	4	4	10	1	Dead	Poor	Very Low	<1 y	Crown bias east.	7.2	2.7	CoF LL	NA	0%	0%	None	BMO		
36	<i>Pinus radiata</i>	Monterey Pine	Early-mature	Exotic conifer	27	101	12	8	4	2	3	5	Fair	Fair to Poor	Mod.C	11-20 y	Woody weed sp., partly suppressed - crown bias rw.	3.2	2.1	Under-size	NA	0%	0%	None	BMO		
37	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Maturing	Indigenous	30,30	157	13	11	4	2	5	4	Fair	Fair	Mod.B	21-40 y		5.1	2.5	CoF LL	TPZ	12.4%	0%	Channel B - 12.4%	BMO		
38	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Maturing	Indigenous	35,25	173	13	8	3	2	2	6	Fair	Fair to Poor	Mod.C	11-20 y	Abnormal lean. Over-extended limb is about to fall with active split / crack. Prune to reduce split over-extended limb to south extending over subject site.	5.2	2.6	CoF LL	TPZ-Major	19.4%	0%	Channel B - 19.37%	BMO		
39	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Early-mature	Indigenous	18,18,13	94	8	5	2	3	1	2	Poor	Poor	Low	1-5 y	Past limb failure, tip dieback. Main leader dead.	3.4	2	Under-size	SRZ	15.7%	0%	Channel B - 15.69%	BMO		
40	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	45 @1.0m	126	10	8	4	4	3	2	Fair to Poor	Fair to Poor	Low	6-10 y	Epicormic shoots, tip dieback.	5.4	2.3	CoF LL	TPZ	6.2%	0%	Channel B - 6.21%	BMO		
41	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	17	69	6	2	2	2	2	2	Fair	Fair	Low	6-10 y	Woody weed sp.	2	1.8	ES01, Exempt weed	NA	0%	0%	None	ES01, BMO		
42	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	30	126	8	6	3	3	3	2	Fair to Poor	Fair to Poor	Low	6-10 y	Lost main leader.	3.6	2.3	CoF LL / EMO	TPZ	1.9%	0%	Channel B - 1.93%	ES01, BMO		

treeid	species	comm_name	age_class	origin_typ	dbh_cm	base_circ	height_m	width	n	s	e	w	health	structure	arb_rating	ule_yrs	comments	tpz_rad_m	srz_rad_m	CoF Local Law	impact	incur_pct	impact_nam	overlays
43	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	65	236	11	11	3	4	8	3	Fair	Fair	Mod.B	21-40 y		7.8	2.9	CoF LL / EMO	SRZ	32.2%	Channel B - 24.21% / Access track - 7.98%	ESO1, BMO
44	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	50	189	12	7	4	3	4	3	Fair	Fair to Poor	Mod.C	11-20 y	Epicormic shoots, past limb failure, tip dieback.	6	2.7	CoF LL / EMO	NA	0%	None	ESO1, BMO
45	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	35	141	9	10	2	8	2	3	Fair to Poor	Fair to Poor	Mod.C	11-20 y	Abnormal lean, tip dieback.	4.2	2.4	CoF LL / EMO	SRZ	23.9%	Channel B - 23.85%	ESO1, BMO
46	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	70	251	11	9	4	3	6	3	Fair to Poor	Fair	Mod.C	11-20 y	Tip dieback.	8.4	3	CoF LL / EMO	TPZ	2.2%	Channel B - 2.16%	ESO1, BMO
47	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	12	50	8	4	1	1	1	1	Fair	Fair	Low	6-10 y	Woody weed sp.	2	1.5	ES01_Exempt weed	NA	0%	None	ESO1, BMO
48	<i>Eucalyptus sp.</i>	Gum Tree	Maturing	Indigenous	55	204	11	5	2	3	1	1	Dead	Very Poor	Very Low	<1 y		6.6	2.8	CoF LL / EMO	NA	0%	None	ESO1, BMO
49	<i>Eucalyptus ovata</i>	Swamp Gum	Semi-mature	Indigenous	10	44	7	4	1	1	1	1	Fair	Fair	Mod.C	21-40 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
50	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Semi-mature	Indigenous	7	35	9	2	1	1	1	1	Fair	Fair	Mod.C	11-20 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
51	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Semi-mature	Indigenous	8	38	9	2	1	1	1	1	Fair	Fair	Mod.C	11-20 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
52	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Semi-mature	Indigenous	6	31	9	2	1	1	1	1	Fair	Fair	Mod.C	11-20 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
53	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Semi-mature	Indigenous	9	44	9	3	1	1	1	1	Fair	Fair	Mod.C	21-40 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
54	<i>Eucalyptus sp.</i>	Gum Tree	Maturing	Indigenous	45	173	8	2	1	1	2	0	Dead	Very Poor	Very Low	<1 y		5.4	2.6	CoF LL / EMO	NA	0%	None	ESO1, BMO
55	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Semi-mature	Australian native	6	28	6	4	2	2	1	0	Fair	Fair	Mod.C	6-10 y	Woody weed sp.	2	1.5	ES01_Exempt weed	NA	0%	None	ESO1, BMO
56	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	45	173	14	7	5	2	3	3	Fair	Fair	Mod.B	11-20 y		5.4	2.6	CoF LL / EMO	TPZ-Major	21%	accessstrac - 21.37%	ESO1, BMO
57	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	50	189	12	8	4	4	4	4	Fair	Fair	Mod.B	11-20 y		6	2.7	CoF LL / EMO	TPZ-Major	23%	accessstrac - 22.57%	ESO1, BMO
58	<i>Acacia pycnantha</i>	Golden Wattle	Early-mature	Indigenous	10	38	5	2	1	1	1	1	Fair	Fair	Mod.C	6-10 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
59	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	16	66	6	4	2	2	2	2	Fair	Fair	Mod.C	21-40 y		2	1.7	ES01	NA	0%	None	ESO1, BMO
60	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Maturing	Australian native	20	79	7	2	1	1	1	1	Dead	Very Poor	Very Low	<1 y		2.4	1.8	ES01_Exempt weed	NA	0%	None	ESO1, BMO
61	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	36	126	6	5	0	0	5	0	Dead	Very Poor	Very Low	<1 y		4.3	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
62	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	15	60	5	5	2	3	2	3	Fair	Fair	Mod.C	21-40 y	Weed infested.	2	1.6	ES01	NA	0%	None	ESO1, BMO
63	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	42	141	7	3	0	3	0	2	Dead	Very Poor	Very Low	<1 y		5	2.4	CoF LL / EMO	NA	0%	None	ESO1, BMO
64	<i>Acacia mearmsii</i>	Late Black Wattle	Early-mature	Indigenous	21	79	8	7	3	5	2	4	Fair	Fair to Poor	Mod.C	6-10 y		2.5	1.8	ES01	NA	0%	None	ESO1, BMO
65	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	40	141	8	3	2	1	1	1	Dead	Very Poor	Very Low	<1 y		4.8	2.4	CoF LL / EMO	TPZ	9%	accessstrac - 8.68%	ESO1, BMO
66	<i>Exocarpus cupressiformis</i>	Cherry Ballart	Early-mature	Indigenous	20	75	7	5	3	2	3	1	Fair	Fair	Mod.B	11-20 y	Partly suppressed - crown bias e.	2.4	1.8	ES01	NA	0%	None	ESO1, BMO
67	<i>Exocarpus cupressiformis</i>	Cherry Ballart	Early-mature	Indigenous	19,14,13	126	8	4	2	2	1	2	Fair to Poor	Fair	Mod.C	11-20 y	Minor dieback, reduced foliage density. 13cm stem dead.	3.2	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
68	<i>Pinus radiata</i>	Monterey Pine	Maturing	Exotic conifer	90	346	25	18	9	2	9	9	Fair	Poor	Low	6-10 y	Incipient decay, past stem failure, woody weed sp., crown bias nth.	10.8	3.4	CoF LL_Exempt weed	Lost - Within access track	100%	accessstrac - 37.09% / (Non-Contiguous Areas: accessstrac - 62.91%)	BMO
69	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	18	66	7	5	1	4	1	2	Fair	Very Poor	Very Low	<1 y	Active split, codominant stems. At 1.5m.	2.2	1.7	Undersize weed	TPZ	2.7%	Channel D - 2.65%	BMO
70	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	15	53	4	4	2	2	2	2	Fair	Fair to Poor	Low	6-10 y	Woody weed sp	2	1.6	Undersize weed	SRZ	43.3%	Channel D - 43.3%	BMO
71	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	13	50	5	3	1	2	1	1	Fair	Fair	Mod.C	21-40 y		2	1.5	Undersize weed	TPZ	6.6%	Channel D - 6.56%	BMO
72	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Maturing	Australian native	18, 15, 14	94	6	4	1	3	1	2	Fair	Fair	Low	6-10 y	Woody weed sp.	3.3	2	ES01_Exempt weed	SRZ	28.0%	Channel D - 27.98%	ESO1, BMO
73	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	35	135	3	1	0	1	0	0	Dead	Very Poor	Very Low	<1 y		4.2	2.3	CoF LL / EMO	SRZ	41.5%	Channel D - 41.48%	ESO1, BMO
74	<i>Eucalyptus ovata</i>	Swamp Gum	Early-mature	Indigenous	23	97	9	6	4	2	2	4	Fair	Fair to Poor	Mod.C	11-20 y		2.8	2	ES01	SRZ	31.4%	Channel D - 31.41%	ESO1, BMO
75	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	35	141	13	7	4	3	3	3	Fair	Fair	Mod.C	11-20 y		4.2	2.4	CoF LL / EMO	TPZ	0.5%	Channel D - 0.53%	ESO1, BMO
76	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	30	126	13	8	3	2	6	2	Fair	Fair	Mod.C	11-20 y	Abnormal lean, tip dieback.	3.6	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
77	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	40, 32	189	13	10	7	3	5	5	Fair	Fair	Mod.B	21-40 y		6.1	2.7	CoF LL / EMO	TPZ	0.5%	Channel D - 0.47%	ESO1, BMO
78	<i>Eucalyptus pyroriana</i>	Gippsland Manna Gum	Maturing	Indigenous	60	220	16	9	4	5	4	4	Fair	Fair	Mod.B	21-40 y		7.2	2.8	CoF LL / EMO	NA	0%	None	ESO1, BMO
79	<i>Eucalyptus ovata</i>	Swamp Gum	Semi-mature	Indigenous	10	50	8	3	1	1	1	1	Fair	Fair	Mod.C	11-20 y		2	1.5	ES01	SRZ	10.3%	Channel D - 10.32%	ESO1, BMO
80	<i>Eucalyptus ovata</i>	Swamp Gum	Semi-mature	Indigenous	10	44	9	3	1	1	1	1	Fair	Fair	Mod.C	21-40 y		2	1.5	ES01	NA	0%	None	ESO1, BMO
81	<i>Eucalyptus ovata</i>	Swamp Gum	Early-mature	Indigenous	22	88	9	7	3	4	2	3	Fair	Fair	Mod.C	11-20 y		2.6	1.9	ES01	NA	0%	None	ESO1, BMO
82	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	12	66	6	4	2	2	2	2	Fair	Fair	Mod.C	21-40 y		2	1.6	ES01	NA	0%	None	ESO1, BMO
83	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	12	66	6	4	2	2	2	2	Fair	Fair to Poor	Mod.C	11-20 y	Abnormal lean. SW.	2	1.5	ES01	NA	0%	None	ESO1, BMO
84	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Semi-mature	Indigenous	11	44	9	3	1	1	1	1	Fair	Fair	Mod.C	21-40 y	Partly suppressed - crown bias west.	2	1.5	ES01	NA	0%	None	ESO1, BMO
85	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	60	204	11	16	8	8	4	7	Fair	Fair to Poor	Mod.B	11-20 y	Past stem failure, over-extended limbs developing.	7.2	2.8	CoF LL / EMO	NA	0%	None	ESO1, BMO
86	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	3,3,3,3,3	57	4	6	3	3	3	4	Fair	Fair to Poor	Low	6-10 y	Multi-stemmed, woody weed sp	2	1.6	ES01_Exempt weed	NA	0%	None	ESO1, BMO

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

treeid	species	comm_name	age_class	origin_typ	dbh_cm	base_circ	height_m	width	n	s	e	w	health	structure	arb_rating	ule_yrs	comments	tpz_rad_m	srz_rad_m	CoF Local Law	impact	incur_pct	impact_name	overlays
87	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Young	Indigenous	4	31	7	2	1	1	0	2	Fair	Fair	Mod.C	21-40 y	Weed infested, partly suppressed - crown bias w.	2	1.5	ESO1	NA	0%	None	ESO1, BMO
88	<i>Allocasuarina littoralis</i>	Black She-oak	Early-mature	Indigenous	14	57	4	3	1	2	1	2	Fair	Fair	Mod.C	11-20 y	Weed infested.	2	1.6	ESO1	NA	0%	None	ESO1, BMO
89	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	75 (est.)	251	12	15	4	12	4	5	Fair	Fair to Poor	Mod.B	11-20 y	Acute forks, weed infested, partly suppressed - crown bias sth.	9	3	CoF LL / EMO	NA	0%	None	ESO1, BMO
90	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	37.33	189	11	7	3	3	3	4	Fair	Fair to Poor	Mod.B	11-20 y	Acute forks, weed infested. Tea-tree & Coast Wattle.	5.9	2.7	CoF LL / EMO	NA	0%	None	ESO1, BMO
91	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	40.35 (est.)	236	9	14	4	6	6	8	Fair	Fair	Mod.B	11-20 y	Partly suppressed - crown bias sw.	6.4	2.9	CoF LL / EMO	TPZ	4.0%	Channel D - 3.99%	ESO1, BMO
92	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	30.20	126	7	6	1	4	6	0	Fair	Fair	Mod.C	21-40 y	Partly suppressed - crown bias e.	4.3	2.3	CoF LL / EMO	TPZ	1.1%	Channel D - 1.07%	ESO1, BMO
93	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	45.38 (est.)	236	12	16	9	5	5	6	Fair	Fair	Mod.B	11-20 y	Crown bias, over-extended limbs developing. NW.	7.1	2.9	CoF LL / EMO	TPZ-Major	23.6%	Channel D - 23.58%	ESO1, BMO
94	<i>Exocarpos cupressiformis</i>	Cherry Ballart	Young	Indigenous	7	28	3	2	1	1	0	0	Fair	Fair	Mod.C	11-20 y	Partly suppressed - crown bias w.	2	1.5	ESO1	NA	0%	None	ESO1, BMO
95	<i>Exocarpos cupressiformis</i>	Cherry Ballart	Maturing	Indigenous	23.20	141	10	6	3	3	2	2	Fair	Fair	Mod.B	11-20 y	Acute forks, weed infested.	3.7	2.4	CoF LL / EMO	NA	0%	None	ESO1, BMO
96	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	30	110	10	4	1	3	1	1	Dead	Very Poor	Very Low	<1 y		3.6	2.1	ESO1	NA	0%	None	ESO1, BMO
97	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Maturing	Australian native	25	94	10	5	2	3	1	1	Fair	Fair	Low	6-10 y	Woody weed sp.	3	2	ESO1_Exempt weed	NA	0%	None	ESO1, BMO
98	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	30	126	10	6	1	5	2	1	Fair	Fair to Poor	Low	11-20 y	Abnormal lean, epicormic shoots, tip dieback.	3.6	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
99	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	30, 30	141	10	2	0	2	0	1	Dead	Very Poor	Very Low	<1 y		5.1	2.4	CoF LL / EMO	TPZ	2.9%	Channel D - 2.88%	ESO1, BMO
100	<i>Eucalyptus sp.</i>	Gum Tree	Early-mature	Indigenous	30	126	10	7	3	4	1	1	Dead	Very Poor	Very Low	<1 y		3.6	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
101	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	22	94	9	5	2	3	3	2	Fair	Fair to Poor	Mod.C	11-20 y		2.6	2	ESO1	NA	0%	None	ESO1, BMO
102	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	30, 20	141	12	9	6	3	5	3	Fair	Fair	Mod.B	11-20 y		4.3	2.4	CoF LL / EMO	NA	0%	None	ESO1, BMO
103	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	25	101	10	2	0	2	1	1	Dead	Very Poor	Very Low	<1 y		3	2.1	ESO1	NA	0%	None	ESO1, BMO
104	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	35, 30, 30	189	11	11	6	4	5	6	Fair	Fair	Mod.B	21-40 y		6.6	2.7	CoF LL / EMO	TPZ	11.3%	Channel D - 11.34%	ESO1, BMO
105	<i>Leptospermum laevigatum</i>	Coast Tea-tree	Maturing	Victorian native	15, 13, 12, 12	110	4	9	3	3	3	3	Fair	Fair to Poor	Low	6-10 y	Multi-stemmed, woody weed sp	3.1	2.5	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO
106	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	35	141	10	9	2	7	2	2	Fair	Fair	Mod.C	21-40 y		4.2	2.4	CoF LL / EMO	NA	0%	None	ESO1, BMO
107	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	54 (est.)	189	10	10	2	6	5	5	Fair	Fair to Poor	Mod.B	11-20 y	Past limb failure, partly suppressed - crown bias s.	6.5	2.7	CoF LL / EMO	TPZ	6.9%	Channel D - 6.93%	ESO1, BMO
108	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	75	251	14	13	9	1	5	8	Fair	Fair	Mod.B	11-20 y	Crown bias nw.	9	3	CoF LL / EMO	TPZ-Major	19.1%	Channel D - 19.09%	ESO1, BMO
109	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	30	126	11	6	4	2	2	4	Fair	Fair	Mod.C	21-40 y	Epicormic shoots.	3.6	2.3	CoF LL / EMO	NA	0%	None	ESO1, BMO
110	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Early-mature	Indigenous	36.33	204	13	12	4	5	6	6	Fair	Fair	Mod.B	11-20 y	Acute forks, codominant stems.	5.9	2.8	CoF LL / EMO	NA	0%	None	ESO1, BMO
111	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Early-mature	Indigenous	30, 15	141	11	8	6	2	3	5	Fair	Fair	Mod.B	11-20 y		4	2.4	CoF LL / EMO	TPZ	0.0%	Channel D - 0.01%	ESO1, BMO
112	<i>Eucalyptus pryoriana</i>	Gippsland Manna Gum	Maturing	Indigenous	40	157	10	8	6	2	2	2	Fair	Fair	Mod.B	11-20 y		4.8	2.5	CoF LL / EMO	NA	0%	None	ESO1, BMO
113	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Early-mature	Indigenous	33.31 (est.)	173	14	6	1	5	3	3	Fair to Poor	Fair to Poor	Mod.C	11-20 y	Dieback, past limb failure. In main leader.	5.4	2.6	CoF LL / EMO	NA	0%	None	ESO1, BMO
114	<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark	Maturing	Indigenous	40	157	8	6	4	2	2	2	Fair to Poor	Fair to Poor	Low	6-10 y	Lost main leader, trunk wounds.	4.8	2.5	CoF LL	NA	0%	None	BMO
Grp 1	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	10	41	4	3					Fair	Fair to Poor	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.5	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO
Grp 4	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	10	41	4	3					Fair	Fair to Poor	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.5	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO
Grp 3	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	3	13	3	3					Fair	Fair	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.5	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO
Grp 2	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	3	16	3	3					Fair	Fair	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.5	Undersize weed	NA	0%	None	BMO
Grp 5	<i>Acacia longifolia var. sophorae</i>	Coast Wattle	Early-mature	Australian native	6-10	47	3	3					Fair	Fair	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.5	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO
Grp 6	<i>Acacia longifolia var. sophorae, Kunzea ericoides, Leptospermum laevigatum</i>	Coast Wattle, Burgan, Coast Tea-tree	Early-mature	Victorian Australian native	10	79	3	3					Fair	Fair to Poor	Low	1-5 y	Proliferating multi-stemmed woody weed sp. Weed infested	2	1.8	ESO1_Exempt t weed	NA	0%	None	ESO1, BMO

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Appendix 2: Tree Location Plan: Hanson Langwarrin Quarry Extension – Existing Conditions

Refer to following 4 pages

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

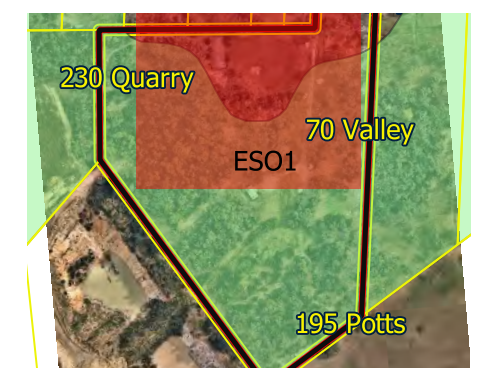
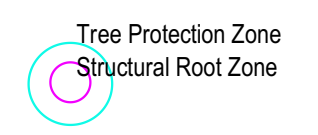




LEGEND

- Trees by Arb rating
- ◆ Mod-A
 - Mod-B
 - ◆ Mod-C
 - Low
 - ▼ Very Low
- Overlays
- ESO1
 - Parcels
 - Subject site
 - Other

ADVERTISED PLAN



**APPENDIX 2A
TREE LOCATIONS AND
PROTECTION ZONES**

MAP NO. 1 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747

DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track,
Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
ABN: 95 080 021 610 Ringwood, VIC
TEL: 1300 656 926 Australia 3134

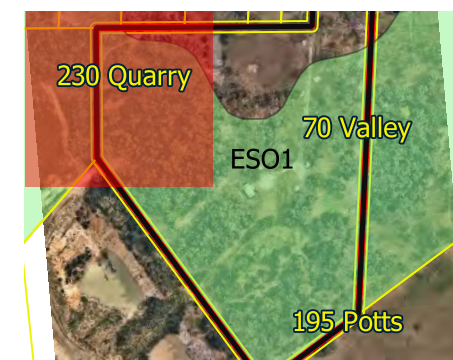


This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

LEGEND

- Trees by Arb rating Groups by Arb rating
- ◆ Mod-A □ Low
 - Mod-B □ Overlays
 - ◆ Mod-C □ ESO1
 - Low □ Parcels
 - ▼ Very Low □ Subject site
 - Other

ADVERTISED PLAN



APPENDIX 2A
TREE LOCATIONS AND PROTECTION ZONES

MAP NO. 2 / 4

PROJECT
HANSON - LANGWARRIN QUARRY EXPANSION

CLIENT
Hanson - Langwarrin Quarry Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track, Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

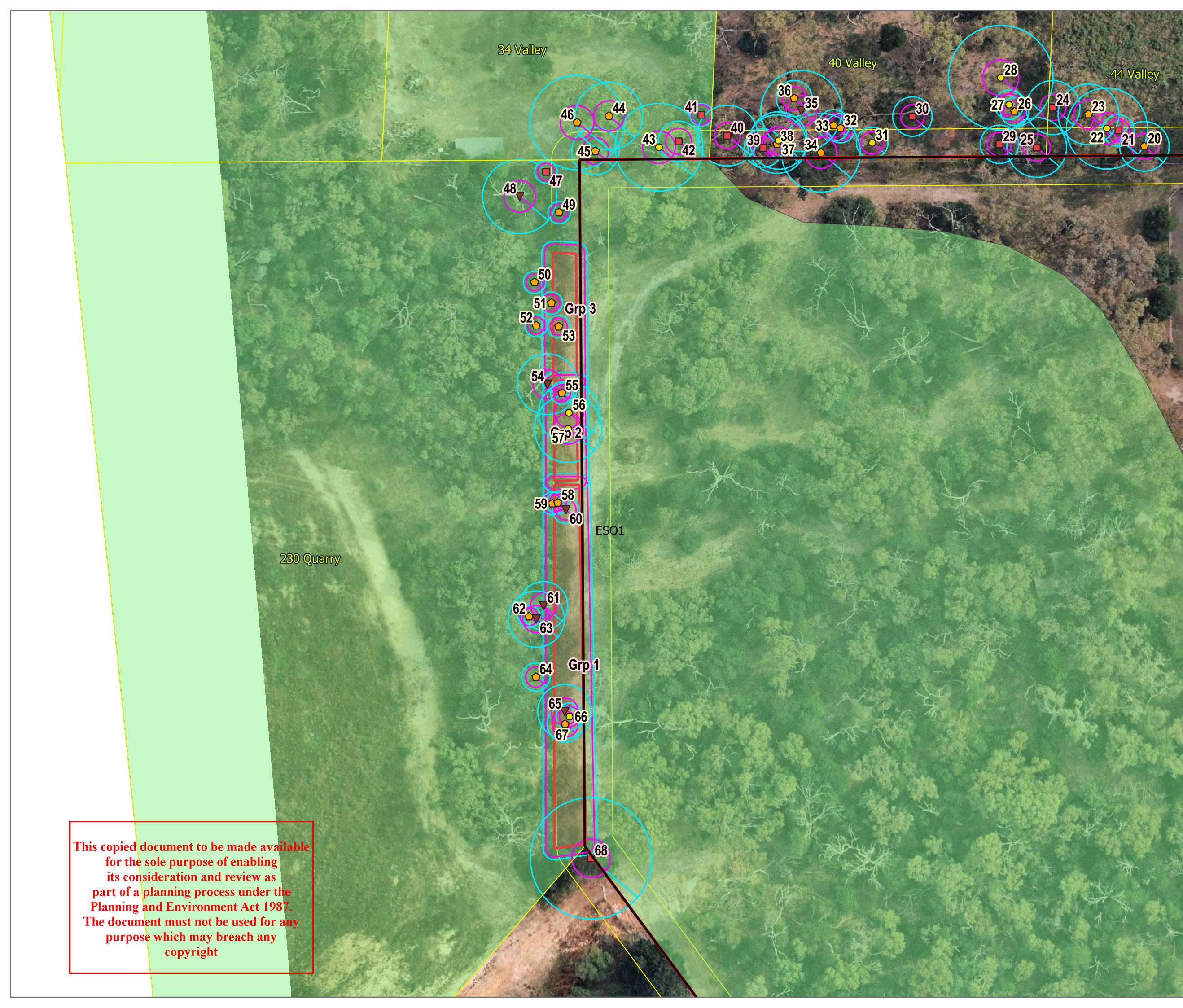
COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
 ABN: 95 080 021 610 Ringwood, VIC
 TEL: 1300 656 926 Australia 3134



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright





This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

LEGEND

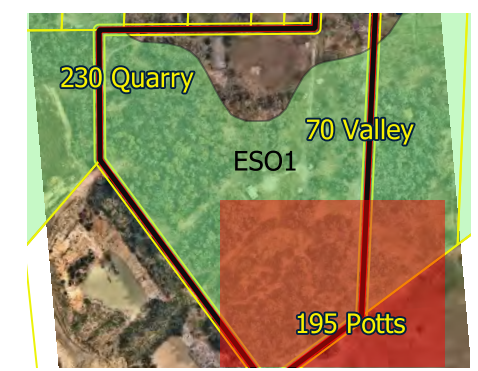
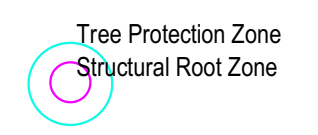
Trees by Arb rating Groups by Arb rating

- ◆ Mod-A
- Mod-B
- ◆ Mod-C
- Low
- ▼ Very Low

Groups by Arb rating

- Low
- ESO1
- Parcels
- Subject site
- Other

ADVERTISED PLAN



APPENDIX 2A TREE LOCATIONS AND PROTECTION ZONES

MAP NO. 3 / 4

PROJECT
HANSON - LANGWARRIN QUARRY EXPANSION

CLIENT
Hanson - Langwarrin Quarry Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track, Bunds & Pit contours

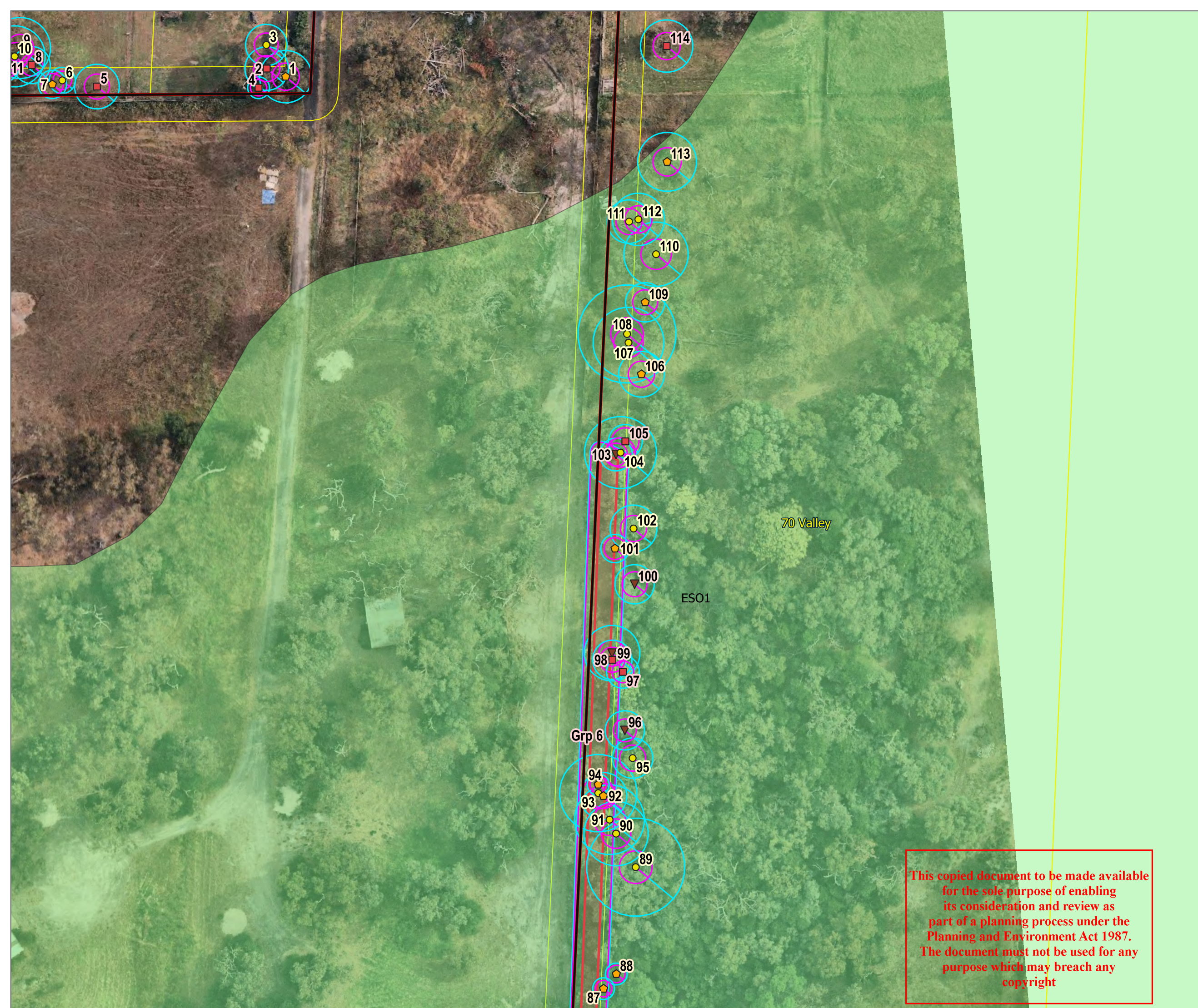
TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
ABN: 95 080 021 610 Ringwood, VIC
TEL: 1300 656 926 Australia 3134





LEGEND

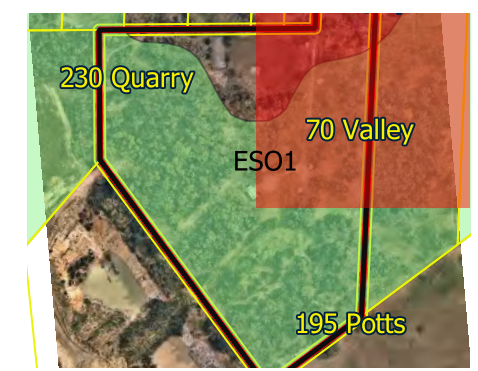
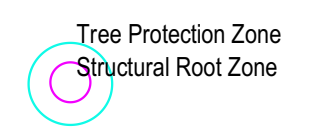
Trees by Arb rating

- ◆ Mod-A
- Mod-B
- ◆ Mod-C
- Low
- ▼ Very Low

Groups by Arb rating

- Low
- ESO1
- Subject site
- Other

ADVERTISED PLAN



APPENDIX 2A TREE LOCATIONS AND PROTECTION ZONES

MAP NO. 4 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track,
Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
 ABN: 95 080 021 610 Ringwood, VIC
 TEL: 1300 656 926 Australia 3134



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

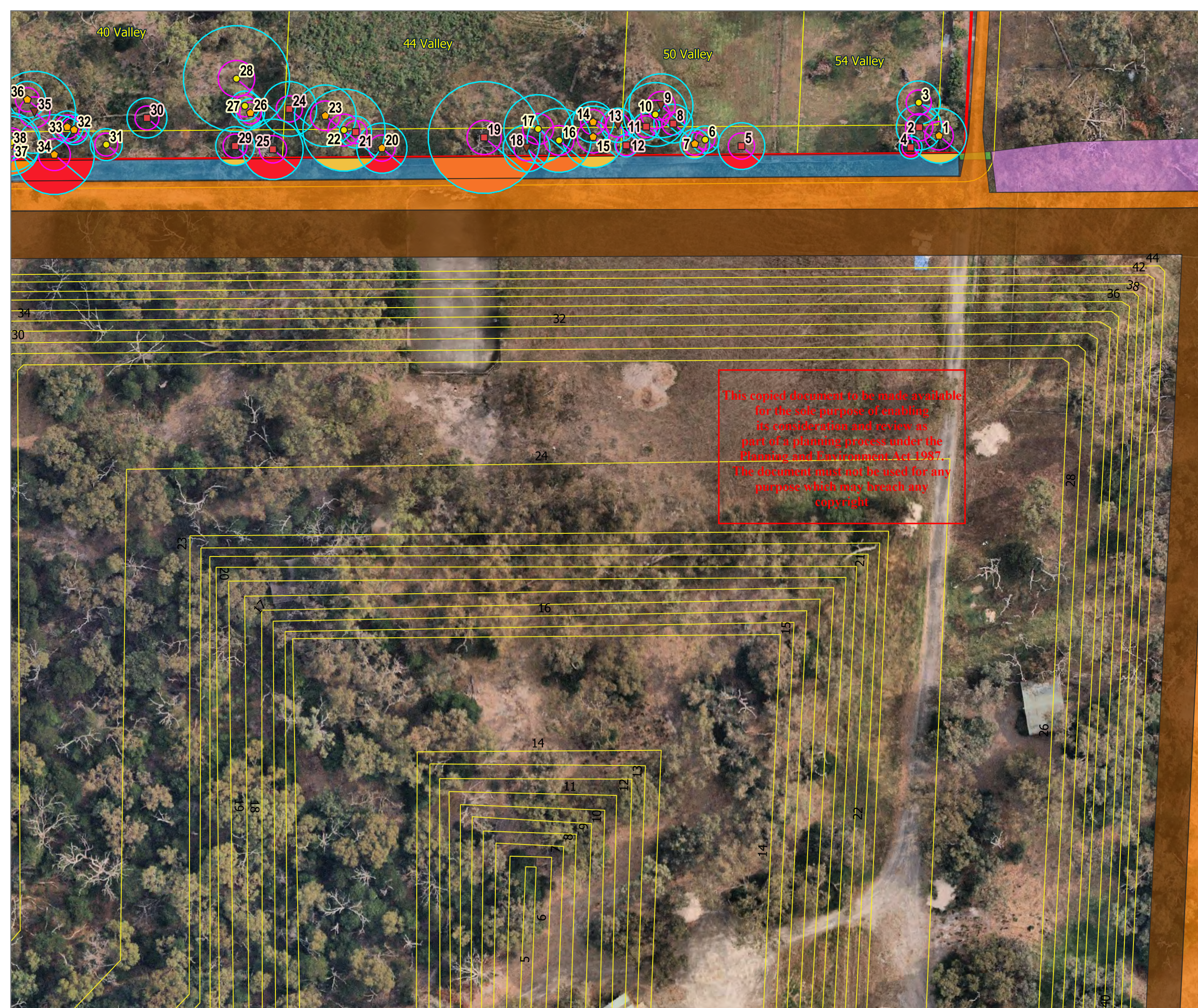
Appendix 2A: Design Review – TPZ Impact Plan: Hanson Langwarrin Quarry Expansion – Proposed

Refer to following 4 pages

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

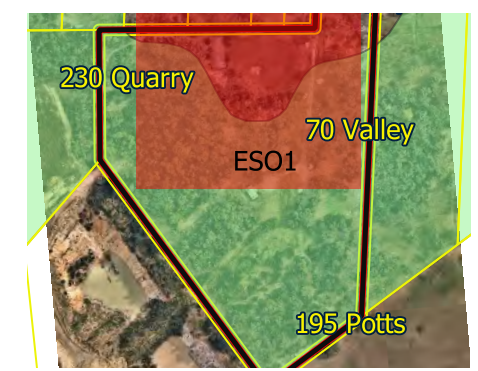
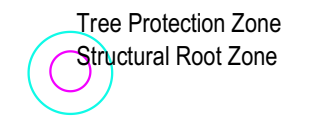




LEGEND

Trees by Arb rating	TPZ
● Mod-B	Access Track
◆ Mod-C	Pit contours
■ Low	Bunds
▼ Very Low	Drainage
TPZ impacts	Channel B
SRZ	Channel D
TPZ-Major	culvert

ADVERTISED PLAN



APPENDIX 2B TPZ ENCROACHMENT BY PROPOSED WORKS MAP NO. 1 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track,
Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
 Ringwood, VIC
 Australia 3134
 ABN: 95 080 021 610
 TEL: 1300 656 926



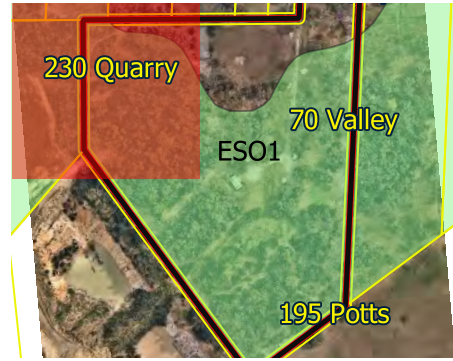
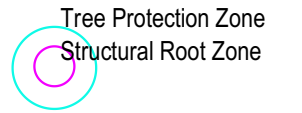
This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



LEGEND

- Trees by Arb rating
 - Mod-B
 - ◆ Mod-C
 - Low
 - ▼ Very Low
- Groups by Arb rating
 - Low
- TPZ impacts
 - SRZ
- TPZ-Major
- TPZ
- Access Track
- Pit contours
- Bunds
- Drainage
 - Channel B

ADVERTISED PLAN



**APPENDIX 2B
TPZ ENCROACHMENT BY
PROPOSED WORKS**

MAP NO. 2 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track, Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tce
 Ringwood, VIC
 ABN: 95 080 021 610
 TEL: 1300 656 926 Australia 3134

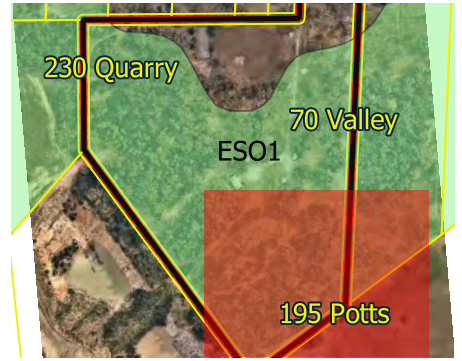
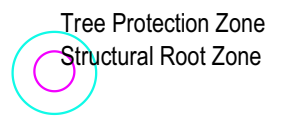


This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

LEGEND

Trees by Arb rating	TPZ impacts
● Mod-B	■ SRZ
● Mod-C	■ TPZ
■ Low	■ Access Track
▼ Very Low	— Pit contours
Groups by Arb rating	■ Bunds
■ Low	■ Drainage
	■ Channel D

ADVERTISED PLAN



APPENDIX 2B TPZ ENCROACHMENT BY PROPOSED WORKS

MAP NO. 3 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747
DATE
2023-03-08

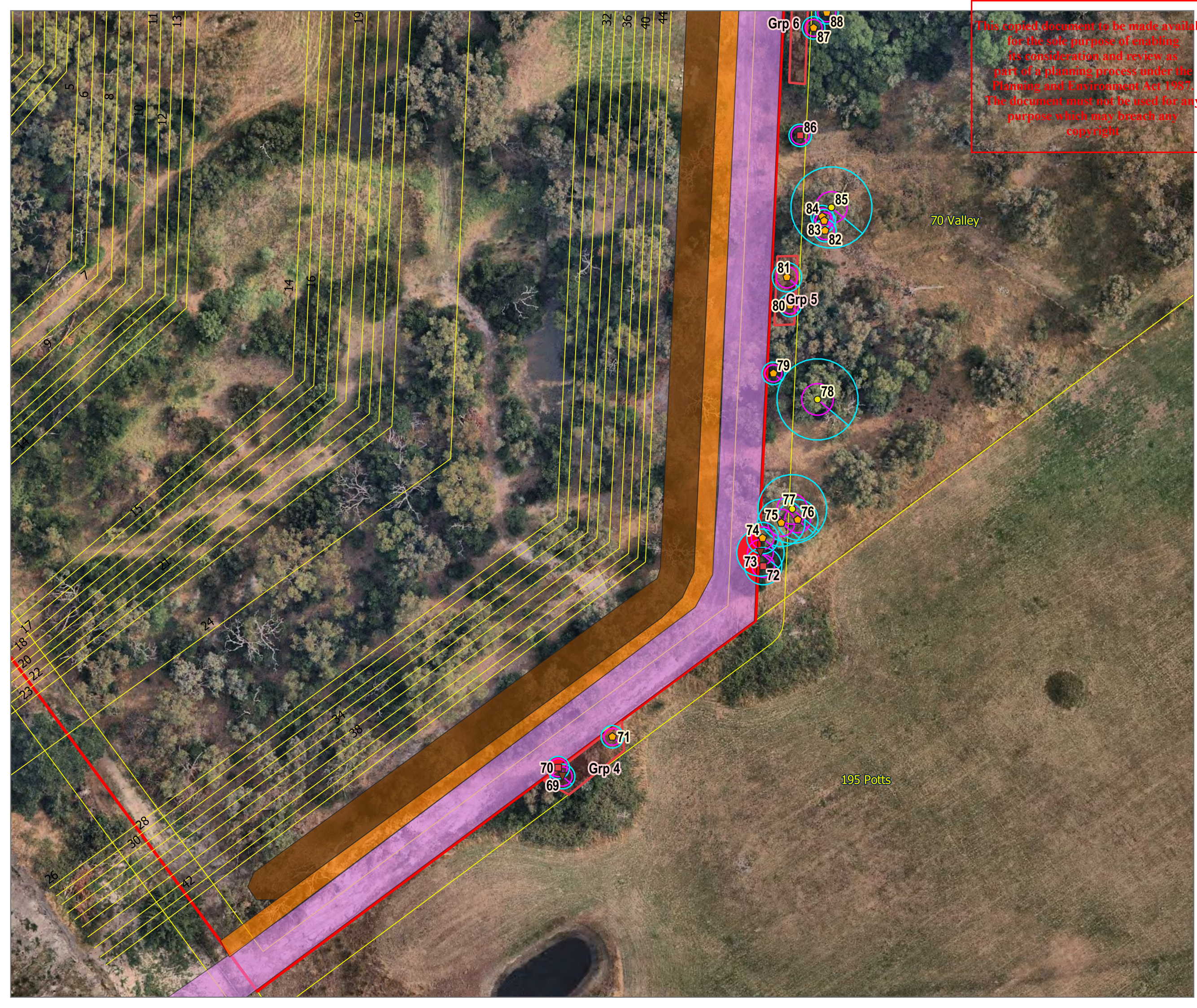
DATA SOURCES
Ricardo Data files for proposed Drainage, Access track,
Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



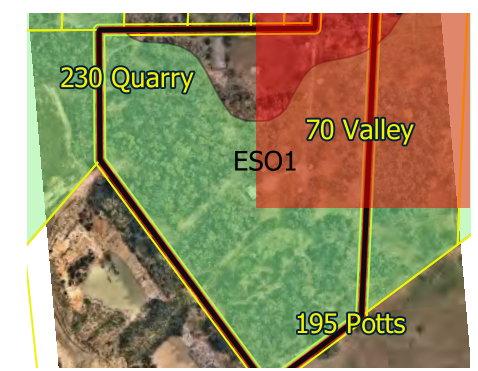
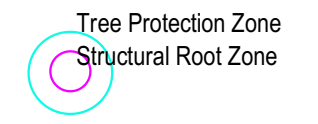
TREELOGIC PTY LTD 4 / 21 Eugene Tce
ABN: 95 080 021 610 Ringwood, VIC
TEL: 1300 656 926 Australia 3134



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

- LEGEND**
- Trees by Arb rating
 - Mod-B
 - ◆ Mod-C
 - Low
 - ▼ Very Low
 - TPZ
 - Access Track
 - Pit contours
 - Bunds
 - Drainage
 - Channel B
 - Channel D
 - culvert
 - Groups by Arb rating
 - Low
 - SRZ
 - TPZ-Major

ADVERTISED PLAN



APPENDIX 2B TPZ ENCROACHMENT BY PROPOSED WORKS

MAP NO. 4 / 4

PROJECT
HANSON - LANGWARRIN QUARRY
EXPANSION

CLIENT
Hanson - Langwarrin Quarry
Expansion

TL REF.
12747
DATE
2023-03-08

DATA SOURCES
Ricardo Data files for proposed Drainage, Access track, Bunds & Pit contours

TREE LOCATION DISCLAIMER
Tree locations are approximate

COORDINATE REFERENCE SYSTEM
EPSG:28355 | GDA 94 MGA Zone 55



TREELOGIC PTY LTD 4 / 21 Eugene Tee
 ABN: 95 080 021 610 Ringwood, VIC
 TEL: 1300 656 926 Australia 3134

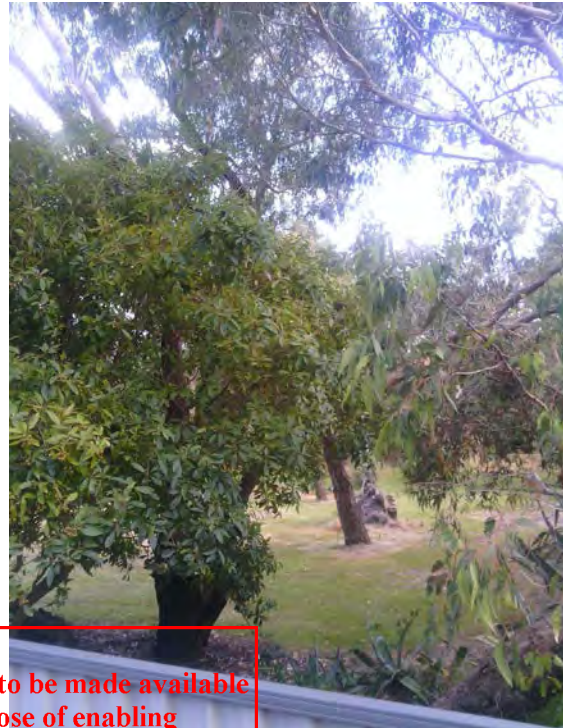


Tree pictures

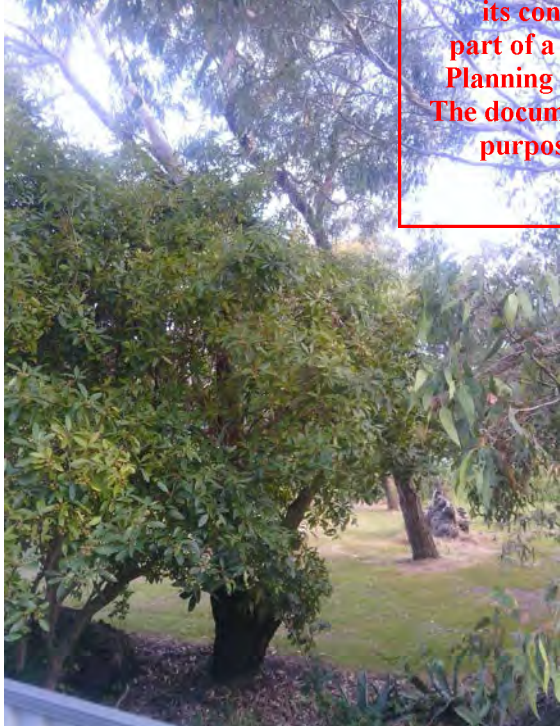
Tree ID: 1. *Eucalyptus ovata* (Swamp Gum), Maturing, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean, incipient decay, past limb failure.
 DBH: 40 cm. TPZ rad 4.8 m². H x W (m): 9 x 7
 TPZ encroach: Channel B - 11.62%, culvert - 0.04%. Permit: CoF LL



Tree ID: 3. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Crown bias sw.
 DBH: 32 cm. TPZ rad 3.8 m². H x W (m): 9 x 8
 TPZ encroach: None. Permit: CoF LL



Tree ID: 2. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Low. Deadwood >50mm, trunk wounds, partly suppressed - crown bias west.
 DBH: 33 (est.) cm. TPZ rad 4 m². H x W (m): 8 x 9
 TPZ encroach: None. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 4. *Pittosporum undulatum* (Sweet Pittosporum), Semi-mature, Victorian native.
 Arb. Rating: Low.
 DBH: 7 cm. TPZ rad 2 m². H x W (m): 5 x 5
 TPZ encroach: Channel B - 15.89%. Permit: Undersize weed



ADVERTISED PLAN

Tree ID: 5. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low. Lost main leader. Recently died.
 DBH: 34 (est.) cm. TPZ rad 4.1 m². H x W (m): 7 x 5
 TPZ encroach: Channel B - 26.03%. Permit: CoF LL



Tree ID: 7. *Eucalyptus ovata* (Swamp Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Lost main leader.
 DBH: 22 cm. TPZ rad 2.6 m². H x W (m): 9 x 3
 TPZ encroach: Channel B - 5.78%. Permit: Undersize



Tree ID: 6. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 20 cm. TPZ rad 2.4 m². H x W (m): 10 x 3
 TPZ encroach: None. Permit: Undersize



Tree ID: 8. *Acacia longifolia* var. *sophorae* (Coast Wattle), Maturing, Australian native.
 Arb. Rating: Low. Excess end weight, crown bias sw. Woody weed sp.
 DBH: 28 cm. TPZ rad 3.4 m². H x W (m): 5 x 7
 TPZ encroach: None. Permit: Undersize weed



**This copied document to be made available
 for the sole purpose of enabling
 its consideration and review as
 part of a planning process under the
 Planning and Environment Act 1987.
 The document must not be used for any
 purpose which may breach any
 copyright**



**ADVERTISED
 PLAN**

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 9. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Very Low. Epicormic shoots, stump re-sprout.
 DBH: 47 (est.) cm. TPZ rad 5.6 m². H x W (m): 6 x 3
 TPZ encroach: None. Permit: CoF LL



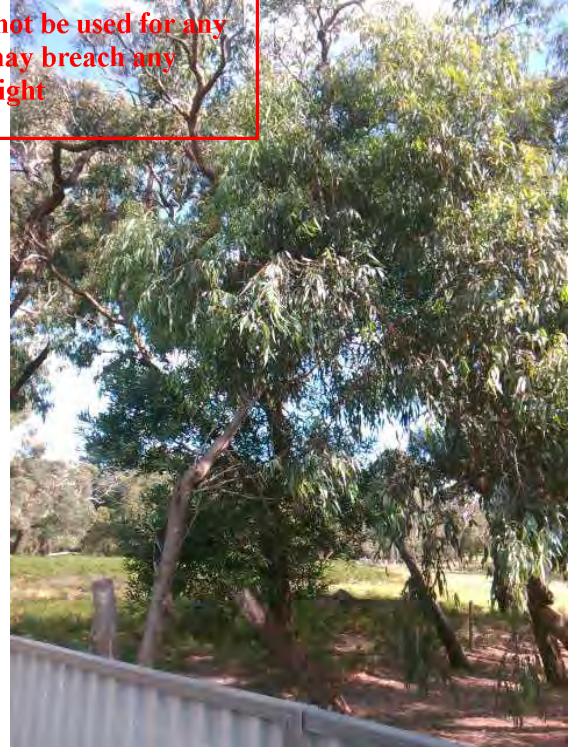
Tree ID: 11. *Eucalyptus ovata* (Swamp Gum), Semi-mature, Indigenous.
 Arb. Rating: Low. Abnormal lean, lost main leader.
 DBH: 20 cm. TPZ rad 2.4 m². H x W (m): 6 x 7
 TPZ encroach: None. Permit: Undersize



Tree ID: 10. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Partly suppressed - crown bias sth.
 DBH: 47 cm. TPZ rad 5.6 m². H x W (m): 9 x 11
 TPZ encroach: None. Permit: CoF LL



Tree ID: 12. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Incipient decay, partly suppressed - crown bias nth.
 DBH: 20 cm. TPZ rad 2.4 m². H x W (m): 7 x 4
 TPZ encroach: None. Level B - 0.01%. Permit: Undersize weed



This Copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 13. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 25 cm. TPZ rad 3 m². H x W (m): 4 x 2
 TPZ encroach: None. Permit: Undersize



Tree ID: 15. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Basal wounds, minor dieback, crown bias se.
 DBH: 45 cm. TPZ rad 5.4 m². H x W (m): 10 x 8
 TPZ encroach: Channel B - 12.81%. Permit: CoF LL



Tree ID: 14. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 30 cm. TPZ rad 3.6 m². H x W (m): 10 x 8
 TPZ encroach: None. Permit: CoF LL



Tree ID: 16. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Partly suppressed - crown bias sth.
 DBH: 47 cm. TPZ rad 5.6 m². H x W (m): 9 x 8
 TPZ encroach: Channel B - 19.24%. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

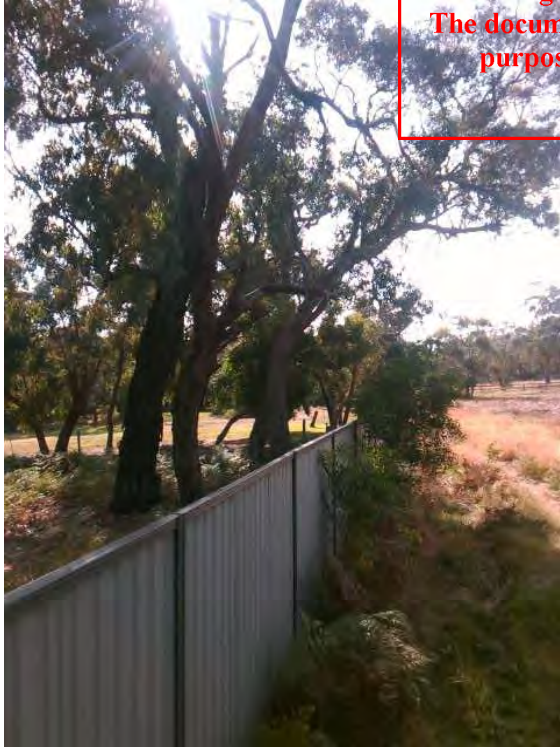
Tree ID: 17. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 50 cm. TPZ rad 6 m^r. H x W (m): 15 x 8
 TPZ encroach: Channel B - 4.82%. Permit: CoF LL



Tree ID: 19. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Low. Tip dieback. Main leader dead.
 DBH: 60,55 cm. TPZ rad 9.8 m^r. H x W (m): 10 x 13
 TPZ encroach: Channel B - 20.15% / (Non-Contiguous Areas: Channel B - 7.97%). Permit: CoF LL



Tree ID: 18. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 34 cm. TPZ rad 4.1 m^r. H x W (m): 8 x 4
 TPZ encroach: Channel B - 27.71%. Permit: CoF LL



Tree ID: 20. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Partly suppressed - crown bias, over-extended limbs developing. Sir
 DBH: 44 cm. TPZ rad 4.4 m^r. H x W (m): 6 x 11
 TPZ encroach: Channel B - 25.86%. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

ADVERTISED PLAN

Tree ID: 21. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low. Lost main leader.
 DBH: 23 cm. TPZ rad 2.8 m². H x W (m): 6 x 5
 TPZ encroach: None. Permit: Undersize



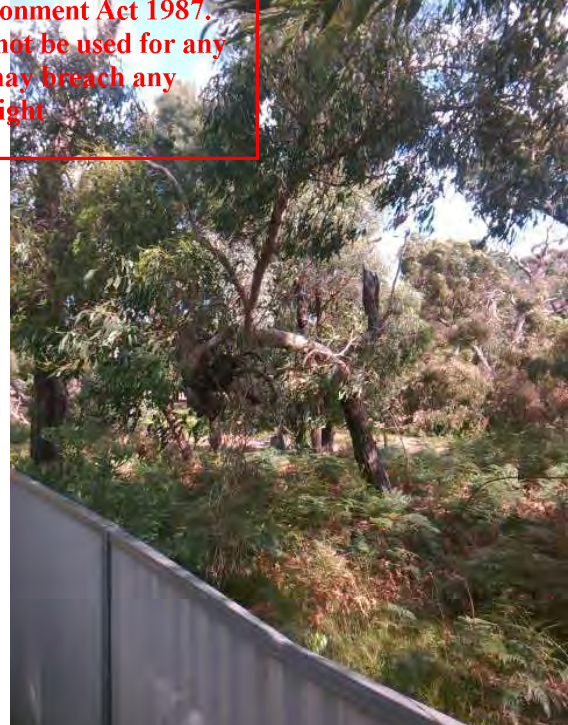
Tree ID: 23. *Eucalyptus radiata* (Narrow-leaved Peppermint), Maturing, Indigenous.
 Arb. Rating: Mod.C. Tip dieback, trunk wounds.
 DBH: 45 cm. TPZ rad 5.4 m². H x W (m): 11 x 7
 TPZ encroach: None. Permit: CoF LL



Tree ID: 22. *Eucalyptus radiata* (Narrow-leaved Peppermint), Maturing, Indigenous.
 Arb. Rating: Mod.A.
 DBH: 60 cm. TPZ rad 7.2 m². H x W (m): 12 x 12
 TPZ encroach: Channel B - 10.12%. Permit: CoF LL



Tree ID: 24. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low. Lost main leader, crown bias sth.
 DBH: 40 (est.) cm. TPZ rad 4.8 m². H x W (m): 6 x 7
 TPZ encroach: None. Permit: CoF LL



This copied document to be made available
 for the sole purpose of enabling
 its consideration and review as
 part of a planning process under the
 Planning and Environment Act 1987.
 The document must not be used for any
 purpose which may breach any
 copyright

ADVERTISED
 PLAN

Tree ID: 25. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low.
 DBH: 44 cm. TPZ rad 5.3 m. H x W (m): 11 x 3
 TPZ encroach: Channel B - 30.44%. Permit: CoF LL



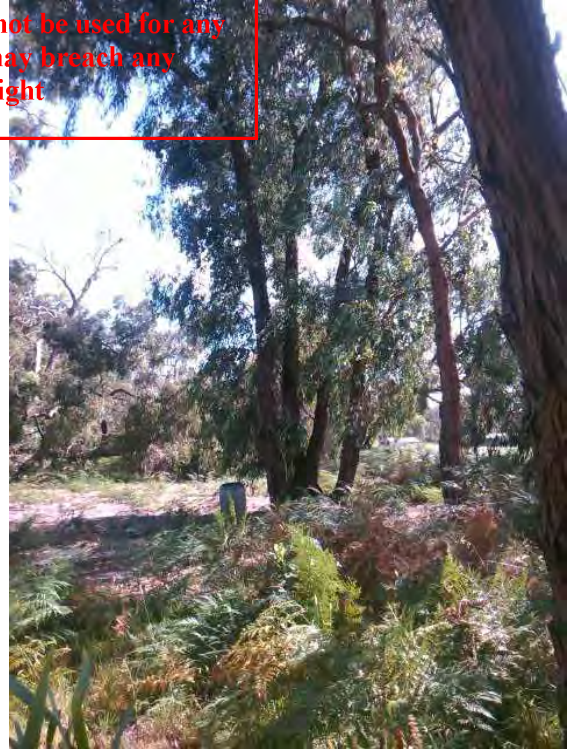
Tree ID: 27. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 22 cm. TPZ rad 2.6 m. H x W (m): 8 x 5
 TPZ encroach: None. Permit: Undersize



Tree ID: 26. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Leaning trunk, crown bias sth.
 DBH: 21 cm. TPZ rad 2.5 m. H x W (m): 6 x 6
 TPZ encroach: None. Permit: Undersize



Tree ID: 28. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B. Multi-stemmed, over-extended limbs developing.
 DBH: 21 cm. TPZ rad 9.3 m. H x W (m): 14 x 14
 TPZ encroach: None. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 29. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low. Declining, dieback, foliage sparse, partly suppressed - crown bias sw.
 DBH: 28 cm. TPZ rad 3.4 m². H x W (m): 9 x 6
 TPZ encroach: Channel B - 10.77%. Permit: Undersize



Tree ID: 31. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 23 cm. TPZ rad 2.8 m². H x W (m): 8 x 6
 TPZ encroach: Channel B - 0.38%. Permit: Undersize



Tree ID: 30. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Low. Abnormal lean, leaning trunk. Site 1
 DBH: 29 cm. TPZ rad 3.5 m². H x W (m): 4 x 1
 TPZ encroach: None. Permit: Undersize



Tree ID: 32. *Eucalyptus radiata* (Narrow-leaved Peppermint), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Main leader dead, partly suppressed - crown bias S
 DBH: 23 cm. TPZ rad 2.6 m². H x W (m): 7 x 6
 TPZ encroach: None. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED
PLAN



Tree ID: 33. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean. To east.
 DBH: 23 cm. TPZ rad 2.8 m². H x W (m): 9 x 7
 TPZ encroach: None. Permit: Undersize



Tree ID: 35. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Very Low. Crown bias east.
 DBH: 45,40 cm. TPZ rad 7.2 m². H x W (m): 10 x 12
 TPZ encroach: None. Permit: CoF LL



Tree ID: 34. *Pinus radiata* (Monterey Pine), Maturing, Exotic conifer.
 Arb. Rating: Mod.C. Woody weed sp
 DBH: 58 cm. TPZ rad 7 m². H x W (m): 21 x 11
 TPZ encroach: Channel B - 29.24% / (Non-Contiguous Areas: Channel B - 11.53%). Permit: CoF LL



Tree ID: 36. *Pinus radiata* (Monterey Pine), Early-mature, Exotic conifer.
 Arb. Rating: Mod.C. Woody weed sp., partly suppressed - crown bias NW.
 DBH: 27 cm. TPZ rad 3.2 m². H x W (m): 12 x 8
 TPZ encroach: None. Permit: Undersize



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 37. *Eucalyptus radiata* (Narrow-leaved Peppermint), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 30, 30 cm. TPZ rad 5.1 m². H x W (m): 13 x 11
 TPZ encroach: Channel B - 12.4%. Permit: CoF LL



Tree ID: 39. *Eucalyptus radiata* (Narrow-leaved Peppermint), Early-mature, Indigenous.
 Arb. Rating: Low. Past limb failure, tip dieback. Main leader dead.,
 DBH: 18,18,13 cm. TPZ rad 3.4 m². H x W (m): 8 x 5
 TPZ encroach: Channel B - 15.69%. Permit: Undersize



Tree ID: 38. *Eucalyptus radiata* (Narrow-leaved Peppermint), Maturing, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean. Over-extended limb is about to fall with active split / crack.
 Urgent pruning is required to reduce the split over-extended limb extending to south over subject site.
 DBH: 35,25 cm. TPZ rad 5.2 m². H x W (m): 13 x 9
 TPZ encroach: Channel B - 19.37%. Permit: CoF LL



Tree ID: 40. *Eucalyptus victoriae* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Low. Epicormic shoots, tip dieback.
 DBH: 45 @ 1.0m cm. TPZ rad 5.4 m². H x W (m): 10 x 8
 TPZ encroach: Channel B - 5.21%. Permit: CoF LL



This report is to be used only for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 41. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Woody weed sp.
 DBH: 17 cm. TPZ rad 2 m². H x W (m): 6 x 2
 TPZ encroach: None. Permit: ESO1



Tree ID: 43. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 65 cm. TPZ rad 7.8 m². H x W (m): 11 x 11
 TPZ encroach: Channel B - 24.21% / (Non-Contiguous Areas: Channel B - 7.98%). Permit: CoF LL / EMO



Tree ID: 42. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Low. Lost main leader.
 DBH: 30 cm. TPZ rad 3.6 m². H x W (m): 8 x 6
 TPZ encroach: Channel B - 1.93%. Permit: CoF LL / EMO



Tree ID: 44. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.C. Epicormic shoots, past limb failure, tip dieback.
 DBH: 30 cm. TPZ rad 5 m². H x W (m): 12 x 7
 TPZ encroach: None. Permit: CoF LL / EMO



This Copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.



ADVERTISED PLAN

Tree ID: 45. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean, tip dieback.
 DBH: 35 cm. TPZ rad 4.2 m². H x W (m): 9 x 10
 TPZ encroach: Channel B - 23.85%. Permit: CoF LL / EMO



Tree ID: 47. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Woody weed sp.
 DBH: 12 cm. TPZ rad 2 m². H x W (m): 8 x 4
 TPZ encroach: None. Permit: ESO1



Tree ID: 46. *Eucalyptus pryoriana* (Gippsland Manna Gum Tree), Maturing, Indigenous. **This Copied Document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright**
 Arb. Rating: Mod.C. Tip dieback.
 DBH: 70 cm. TPZ rad 8.4 m². H x W (m): 11 x 9
 TPZ encroach: Channel B - 2.16%. Permit: CoF LL / EMO



Tree ID: 48. *Eucalyptus pryoriana* (Gum Tree), Maturing, Indigenous.
 Arb. Rating: Very Low.
 DBH: 55 cm. TPZ rad 6.6 m². H x W (m): 11 x 5
 TPZ encroach: None. Permit: CoF LL / EMO



**ADVERTISED
PLAN**

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 49. *Eucalyptus ovata* (Swamp Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 10 cm. TPZ rad 2 m^r. H x W (m): 7 x 4
 TPZ encroach: None. Permit: ESO1



Tree ID: 51. *Eucalyptus pryoriana* (Gippsland Manna Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 8 cm. TPZ rad 2 m^r. H x W (m): 9 x 2
 TPZ encroach: None. Permit: ESO1



Tree ID: 50. *Eucalyptus pryoriana* (Gippsland Manna Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 7 cm. TPZ rad 2 m^r. H x W (m): 9 x 2
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 52. *Eucalyptus pryoriana* (Gippsland Manna Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 6 cm. TPZ rad 2 m^r. H x W (m): 9 x 2
 TPZ encroach: None. Permit: ESO1



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 53. *Eucalyptus pryoriana* (Gippsland Manna Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 9 cm. TPZ rad 2 m^r. H x W (m): 9 x 3
 TPZ encroach: None. Permit: ESO1



Tree ID: 55. *Acacia longifolia* var. *sophorae* (Coast Wattle), Semi-mature, Australian native.
 Arb. Rating: Mod.C. Woody weed sp.
 DBH: 6 cm. TPZ rad 2 m^r. H x W (m): 6 x 4
 TPZ encroach: None. Permit: ESO1



Tree ID: 54. *Eucalyptus* sp. (Gum Tree), Maturing, Indigenous.
 Arb. Rating: Very Low.
 DBH: 45 cm. TPZ rad 5.4 m^r. H x W (m): 8 x 2
 TPZ encroach: None. Permit: CoF LL / EMO



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 56. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 45 cm. TPZ rad 5.4 m^r. H x W (m): 14 x 7
 TPZ encroach: None. Permit: CoF LL / EMO



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 57. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 50 cm. TPZ rad 6 m². H x W (m): 12 x 8
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 59. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 16 cm. TPZ rad 2 m². H x W (m): 6 x 4
 TPZ encroach: None. Permit: ESO1



Tree ID: 58. *Acacia pycnantha* (Golden Wattle) Indigenous.
 Arb. Rating: Mod.C.
 DBH: 10 cm. TPZ rad 2 m². H x W (m): 5 x 2
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 60. *Acacia longifolia* var. *sophorae* (Coast Wattle), Maturing, Australian native.
 Arb. Rating: Very Low.
 DBH: 20 cm. TPZ rad 2.4 m². H x W (m): 7 x 2
 TPZ encroach: None. Permit: ESO1



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 61. *Eucalyptus sp.* (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 36 cm. TPZ rad 4.3 m². H x W (m): 6 x 5
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 63. *Eucalyptus sp.* (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 42 cm. TPZ rad 5 m². H x W (m): 7 x 3
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 62. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C. Weed infested.
 DBH: 15 cm. TPZ rad 2 m². H x W (m): 5 x 5
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 64. *Acacia mearnsii* (Late Black Wattle), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 21 cm. TPZ rad 2.5 m². H x W (m): 8 x 7
 TPZ encroach: None. Permit: ESO1



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 65. *Eucalyptus* sp. (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 40 cm. TPZ rad 4.8 m². H x W (m): 8 x 3
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 67. *Exocarpus cupressiformis* (Cherry Ballart), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Minor dieback, reduced foliage density. 13cm stem dead.
 DBH: 19,14,13 cm. TPZ rad 3.2 m². H x W (m): 8 x 4
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 66. *Exocarpus cupressiformis* (Cherry Ballart), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Partly suppressed - crown bias e.
 DBH: 20 cm. TPZ rad 2.4 m². H x W (m): 7 x 5
 TPZ encroach: None. Permit: ESO1



Tree ID: 68. *Pinus radiata* (Monterey Pine), Maturing, Exotic conifer.
 Arb. Rating: Low. Incipient decay, past stem failure, woody weed sp.,
 DBH: 90 cm. TPZ rad 10.8 m². H x W (m): 25 x 18
 TPZ encroach: None. Permit: CoF LL



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 69. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Very Low. Active split, codominant stems. At 1.5m.
 DBH: 18 cm. TPZ rad 2.2 m. H x W (m): 7 x 5
 TPZ encroach: Channel D - 2.65%. Permit: Undersize



Tree ID: 71. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 13 cm. TPZ rad 2 m. H x W (m): 5 x 3
 TPZ encroach: Channel D - 6.56%. Permit: Undersize



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 70. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Woody weed sp
 DBH: 15 cm. TPZ rad 2 m. H x W (m): 4 x 4
 TPZ encroach: Channel D - 43.3%. Permit: Undersize



Tree ID: 72. *Acacia longifolia* var. *sophorae* (Coast Wattle), Maturing, Australian native.
 Arb. Rating: Low. Woody weed sp.
 DBH: 15 cm. TPZ rad 3.3 m. H x W (m): 6 x 4
 TPZ encroach: Channel D - 27.98%. Permit: ESO1



ADVERTISED
PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 73. *Eucalyptus* sp. (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 35 cm. TPZ rad 4.2 m'. H x W (m): 3 x 1
 TPZ encroach: Channel D - 41.48%. Permit: CoF LL / EMO



Tree ID: 75. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 35 cm. TPZ rad 4.2 m'. H x W (m): 13 x 7
 TPZ encroach: Channel D - 0.53%. Permit: CoF LL / EMO



Tree ID: 74. *Eucalyptus ovata* (Swamp Gum) Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 23 cm. TPZ rad 2.8 m'. H x W (m): 9 x 6
 TPZ encroach: Channel D - 31.41%. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree ID: 76. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean, tip dieback.
 DBH: 30 cm. TPZ rad 3.6 m'. H x W (m): 13 x 8
 TPZ encroach: None. Permit: CoF LL / EMO



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 77. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 40, 32 cm. TPZ rad 6.1 m. H x W (m): 13 x 10
 TPZ encroach: Channel D - 0.47%. Permit: CoF LL / EMO



Tree ID: 79. *Eucalyptus ovata* (Swamp Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 10 cm. TPZ rad 2 m. H x W (m): 8 x 3
 TPZ encroach: Channel D - 10.32%. Permit: ESO1



Tree ID: 78. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.A.
 DBH: 60 cm. TPZ rad 7.2 m. H x W (m): 16 x 9
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 80. *Eucalyptus ovata* (Swamp Gum), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 10 cm. TPZ rad 2 m. H x W (m): 9 x 3
 TPZ encroach: None. Permit: ESO1



This completed document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 81. *Eucalyptus ovata* (Swamp Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 22 cm. TPZ rad 2.6 m. H x W (m): 9 x 7
 TPZ encroach: None. Permit: ESO1



Tree ID: 83. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C. Abnormal lean. SW.
 DBH: 12 cm. TPZ rad 2 m. H x W (m): 4 x 5
 TPZ encroach: None. Permit: ESO1



Tree ID: 82. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 16 cm. TPZ rad 2 m. H x W (m): 6 x 6
 TPZ encroach: None. Permit: ESO1



Tree ID: 84. *Eucalyptus cephalocarpa* (Mealy Stringybark), Semi-mature, Indigenous.
 Arb. Rating: Mod.C. Partly suppressed - crown bias west.
 DBH: 12 cm. TPZ rad 2 m. H x W (m): 4 x 4
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 85. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B. Past stem failure, over-extended limbs developing.
 DBH: 60 cm. TPZ rad 7.2 m². H x W (m): 14 x 16
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 87. *Eucalyptus cephalocarpa* (Mealy Stringybark), Young, Indigenous.
 Arb. Rating: Mod.C. Weed infested, partly suppressed - crown bias w.
 DBH: 4 cm. TPZ rad 2 m². H x W (m): 4 x 2
 TPZ encroach: None. Permit: ESO1



Tree ID: 86. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Multi-stemmed, woody weed sp
 DBH: 3,3,3,3,3 cm. TPZ rad 2 m². H x W (m): 4 x 6
 TPZ encroach: None. Permit: ESO1



Tree ID: 88. *Allocasuarina littoralis* (Black She-oak), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Weed infested.
 DBH: 2 cm. TPZ rad 2 m². H x W (m): 7 x 3
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree ID: 89. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B. Acute forks, weed infested, partly suppressed - crown bias sth.
 DBH: 75 (est.) cm. TPZ rad 9 m². H x W (m): 12 x 15
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 91. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B. Partly suppressed - crown bias sw.
 DBH: 40,35 (est.) cm. TPZ rad 6.4 m². H x W (m): 9 x 14
 TPZ encroach: Channel D - 3.99%. Permit: CoF LL / EMO



Tree ID: 90. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B. Acute forks, weed infested. Teardrop & Coasp Wattle.
 DBH: 37,33 cm. TPZ rad 5.9 m². H x W (m): 11 x 7
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 92. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature Indigenous.
 Arb. Rating: Mod.C. Partly suppressed - crown bias e.
 DBH: 30,20 cm. TPZ rad 4.3 m². H x W (m): 7 x 6
 TPZ encroach: Channel D - 1.07%. Permit: CoF LL / EMO



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED
PLAN

Tree ID: 93. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B. Crown bias, over-extended limbs developing. NW.
 DBH: 45,38 (est.) cm. TPZ rad 7.1 m. H x W (m): 12 x 16
 TPZ encroach: Channel D - 23.58%. Permit: CoF LL / EMO



Tree ID: 95. *Exocarpus cupressiformis* (Cherry Ballart), Maturing, Indigenous.
 Arb. Rating: Mod.B. Acute forks, weed infested.
 DBH: 23,20 cm. TPZ rad 3.7 m. H x W (m): 10 x 6
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 94. *Exocarpus cupressiformis* (Cherry Ballart), Young, Indigenous.
 Arb. Rating: Mod.C. Partly suppressed - crown bias w.
 DBH: 7 cm. TPZ rad 2 m. H x W (m): 3 x 2
 TPZ encroach: None. Permit: ESO1



Tree ID: 96. *Eucalyptus sp.* (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Eow.
 DBH: 89 cm. TPZ rad 3.6 m. H x W (m): 10 x 4
 TPZ encroach: None. Permit: ESO1



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 97. *Acacia longifolia* var. *sophorae* (Coast Wattle), Maturing, Australian native.
 Arb. Rating: Low. Woody weed sp.
 DBH: 25 cm. TPZ rad 3 m². H x W (m): 10 x 5
 TPZ encroach: None. Permit: ESO1



Tree ID: 99. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Very Low.
 DBH: 30, 30 cm. TPZ rad 5.1 m². H x W (m): 10 x 2
 TPZ encroach: Channel D - 2.88%. Permit: CoF LL / EMO



Tree ID: 98. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Low. Abnormal lean, epicormic shoots, tip dieback.
 DBH: 30 cm. TPZ rad 3.6 m². H x W (m): 10 x 6
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 100. *Eucalyptus* sp. (Gum Tree), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 30 cm. TPZ rad 3.6 m². H x W (m): 10 x 7
 TPZ encroach: None. Permit: CoF LL / EMO



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

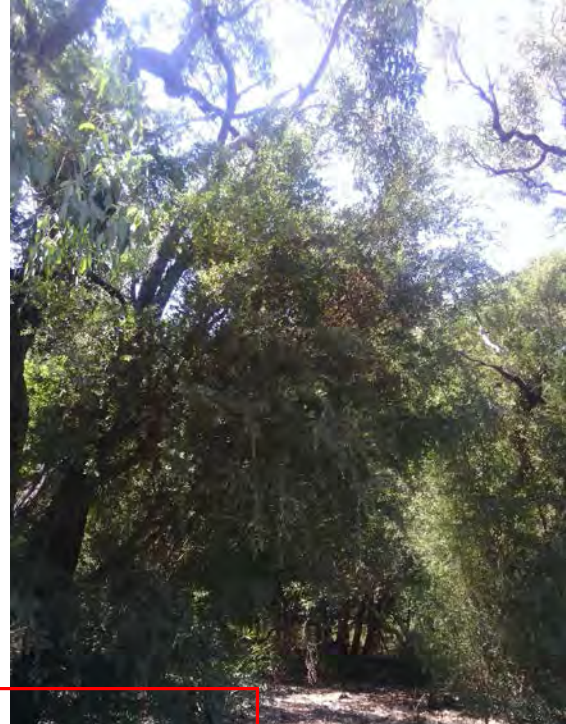
ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 101. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 22 cm. TPZ rad 2.6 m². H x W (m): 9 x 5
 TPZ encroach: None. Permit: ESO1



Tree ID: 103. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Very Low.
 DBH: 25 cm. TPZ rad 3 m². H x W (m): 10 x 2
 TPZ encroach: None. Permit: ESO1



Tree ID: 102. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 30, 20 cm. TPZ rad 4.3 m². H x W (m): 12 x 9
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 104. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 35, 30, 30 cm. TPZ rad 6.6 m². H x W (m): 11 x 11
 TPZ encroach: Channel D - 11.34%. Permit: CoF LL / EMO



Site plan document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 105. *Leptospermum laevigatum* (Coast Tea-tree), Maturing, Victorian native.
 Arb. Rating: Low. Multi-stemmed, woody weed sp
 DBH: 15,13,12,12, cm. TPZ rad 3.1 m². H x W (m): 4 x 9
 TPZ encroach: None. Permit: Undersize weed



Tree ID: 107. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Past limb failure, partly suppressed - crown bias s.
 DBH: 54 (est.) cm. TPZ rad 6.5 m². H x W (m): 10 x 10
 TPZ encroach: Channel D - 6.93%. Permit: CoF LL / EMO



Tree ID: 106. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.C.
 DBH: 35 cm. TPZ rad 4.2 m². H x W (m): 10 x 9
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 108. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B. Crown bias nw.
 DBH: 75 cm. TPZ rad 9 m². H x W (m): 14 x 13
 TPZ encroach: Channel D - 19.09%. Permit: CoF LL / EMO



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 109. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Epicormic shoots.
 DBH: 30 cm. TPZ rad 3.6 m². H x W (m): 11 x 6
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 111. *Eucalyptus cephalocarpa* (Mealy Stringybark), Early-mature, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 30,15 cm. TPZ rad 4 m². H x W (m): 11 x 8
 TPZ encroach: Channel D - 0.01%. Permit: CoF LL / EMO



Tree ID: 110. *Eucalyptus pryoriana* (Gippsland Manna Gum), Early-mature, Indigenous.
 Arb. Rating: Mod.B. Acute forks, codominant stems.
 DBH: 36,33 cm. TPZ rad 5.9 m². H x W (m): 13 x 12
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 112. *Eucalyptus pryoriana* (Gippsland Manna Gum), Maturing, Indigenous.
 Arb. Rating: Mod.B.
 DBH: 40 cm. TPZ rad 4.8 m². H x W (m): 10 x 8
 TPZ encroach: None. Permit: CoF LL / EMO



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: 113. *Eucalyptus radiata* (Narrow-leaved Peppermint), Early-mature, Indigenous.
 Arb. Rating: Mod.C. Dieback, past limb failure. In main leader.
 DBH: 33,31 (est.) cm. TPZ rad 5.4 m². H x W (m): 14 x 6
 TPZ encroach: None. Permit: CoF LL / EMO



Tree ID: 114. *Eucalyptus cephalocarpa* (Mealy Stringybark), Maturing, Indigenous.
 Arb. Rating: Low. Lost main leader, trunk wounds.
 DBH: 40 cm. TPZ rad 4.8 m². H x W (m): 8 x 6
 TPZ encroach: None. Permit: CoF LL
Error! Filename not specified.



Tree ID: Grp 1. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 10 cm. TPZ rad 2 m². H x W (m): 4 x 3
 TPZ encroach: None. Permit: ESO1

Tree ID: Grp 4. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 10 cm. TPZ rad 2 m². H x W (m): 4 x 3
 TPZ encroach: None. Permit: ESO1



Tree ID: Grp 3. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 3 cm. TPZ rad 2 m². H x W (m): 3 x 3
 TPZ encroach: None. Permit: ESO1
Error! Filename not specified.

Tree ID: Grp 2. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 3 cm. TPZ rad 2 m². H x W (m): 3 x 3
 TPZ encroach: None. Permit: Undersize weed



Tree ID: Grp 5. *Acacia longifolia* var. *sophorae* (Coast Wattle), Early-mature, Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 6-10 cm. TPZ rad 2 m². H x W (m): 3 x 3
 TPZ encroach: None. Permit: Undersize weed



ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree report_12747_Hanson Langwarrin Quarry Extension

Tree ID: Grp 6. *Acacia longifolia* var. *sophorae*, *Kunzea ericoides*, *Leptospermum laevigatum* (Coast Wattle, Burgan, Coast Tea-tree), Early-mature, Victorian Australian native.
 Arb. Rating: Low. Proliferating multi-stemmed woody weed sp. Weed infested
 DBH: 10 cm. TPZ rad 2 m. H x W (m): 3 x 3
 TPZ encroach: None. Permit: ESO1



**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



Appendix 3: Arboricultural Descriptors (June 2018)

Note that not all of the described tree descriptors may be used in a tree assessment and report. The assessment is undertaken with regard to contemporary arboricultural practices and consists of a visual inspection of external and above-ground tree parts.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

1. Tree Condition

The assessment of tree condition evaluates factors of health and structure. The descriptors of health and structure attributed to a tree evaluate the individual specimen to what could be considered typical for that species growing in its location under current climatic conditions. For example, some species can display inherently poor branching architecture, such as multiple acute branch attachments with included bark. Whilst these structural defects may technically be considered arboriculturally poor, they are typical for the species and may not constitute an increased risk of failure. These trees may be assigned a structural rating of fair-poor (rather than poor) at the discretion of the assessor.

Diagram 1, provides an indicative distribution curve for tree condition to illustrate that within a normal tree population the majority of specimens are centrally located within the condition range (normal distribution curve). Furthermore, that those individual trees with an assessed condition approaching the outer ends of the spectrum occur less often.

2. Tree Name

Provides botanical name, (genus, species, variety and cultivar) according to accepted international code of taxonomic classification, and common name.

3. Tree Type

Describes the general geographic origin of the species and its type e.g. deciduous or evergreen.

Category	Description
Indigenous	Occurs naturally in the area or region of the subject site. Remnant.
Victorian native	Occurs naturally within some part of the State of Victoria (not exclusively) but is not indigenous (component of EVC benchmark). Could be planted indigenous trees.
Australian native	Occurs naturally within Australia but is not a Victorian native or indigenous
Exotic deciduous	Occurs outside of Australia and typically sheds its leaves during winter
Exotic evergreen	Occurs outside of Australia and typically holds its leaves all year round
Exotic conifer	Occurs outside of Australia and is classified as a gymnosperm
Native conifer	Occurs naturally within Australia and is classified as a gymnosperm
Native Palm	Occurs naturally within Australia. Woody monocotyledon
Exotic Palm	Occurs outside of Australia. Woody monocotyledon

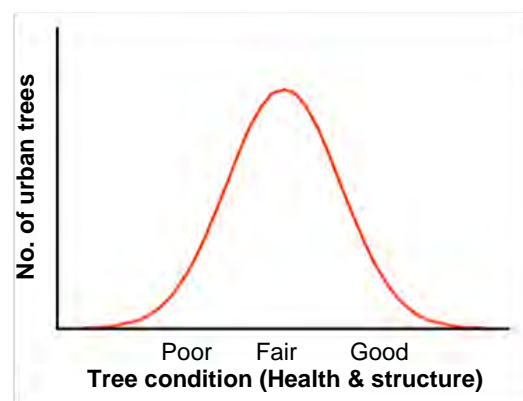


Diagram 1: Indicative normal distribution curve for tree condition

4. Height and Width

Indicates height and width of the individual tree; dimensions are expressed in metres. Crown heights are measured with a height meter where possible. Due to the topography of some sites and/or the density of vegetation it may not be possible to do this for every tree. Tree heights may be estimated in line with previous height meter readings in conjunction with assessor's experience. Crown widths are generally paced (estimated) at the widest axis or can be measured on two axes and averaged. In some instances the crown width can be measured on the four cardinal direction points (North, South, East and West).

Crown height, crown spread are generally recorded to the nearest half metre (crown spread would be rounded up) for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m. Estimated dimensions (e.g. for off-site or otherwise inaccessible trees where accurate data cannot be recovered) shall be clearly identified in the assessment data.

5. Trunk diameters

The position where trunk diameters are captured may vary dependent on the requirements of the specific assessment and an individual trees specific characteristics. DBH is the typical trunk diameter captured as it relates to the allocation of tree protection distances. The basal trunk diameter assists in the allocation of a structural root zone. Some municipalities require trunk diameters be captured at different heights, with 1.0 m above grade being a common requirement. The specific planning schemes will be checked to ascertain requirements.

Stem diameters shall be recorded in centimetres, rounded to the nearest 1 cm (0.01 m).

Diameter at Breast Height (DBH)

Indicates the trunk diameter (expressed in centimetres) of an individual tree measured at 1.4m above the existing ground level or where otherwise indicated, multiple leaders are measured individually. Plants with multiple leader habit may be measured at the base. The range of methods to suit particular trunk shapes, configurations and site conditions can be seen in Appendix A of Australian Standard AS 4970-2009 *Protection of trees on development sites*. Measurements undertaken using foresters tape or builders tape.

Basal trunk diameter

The basal dimension is the trunk diameter measured at the base of the trunk or main stem(s) immediately above the root buttress. Used to ascertain the Structural Root Zone (SRZ) as outlined in AS4970.

6. Age class

Relates to the physiological stage of the tree's life cycle.

Category	Description
Young	Sapling tree and/or recently planted. Approximately 5 or less years in location.
Semi-mature	Tree increasing in size and yet to achieve expected size in situation. Primary developmental stage.
Early-mature	Tree established, generally growing vigorously. > 50% of attainable age/size.
Mature	Specimen approaching expected size in situation, with reduced incremental growth.
Over-mature	Mature full-size with a retrenching crown. Tree is senescent and in decline. Significant decay generally present.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

7. Health

Assesses various attributes to describe the overall health and vigour of the tree.

Health Category	Vigour, Extension growth	Decline symptoms, Deadwood, Dieback	Foliage density, colour, size, intactness	Pests and or disease
Good	Above typical. Excellent. Full canopy density	Negligible	Better than typical	Negligible
Fair	Typical vigour. >80% canopy density	Minor or expected. Little or no dead wood	Typical. Minor deficiencies or defects could be present.	Minor, within damage thresholds
Fair to Poor	Below typical - low vigour	More than typical. Small sub-branch dieback	Exhibiting deficiencies. Could be thinning, or smaller	Exceeds damage thresholds
Poor	Minimal - declining	Excessive, large and/or prominent amount & size of dead wood	Exhibiting severe deficiencies. Thinning foliage, generally smaller or deformed	Extreme and contributing to decline
Dead	N/A	N/A	N/A	N/A

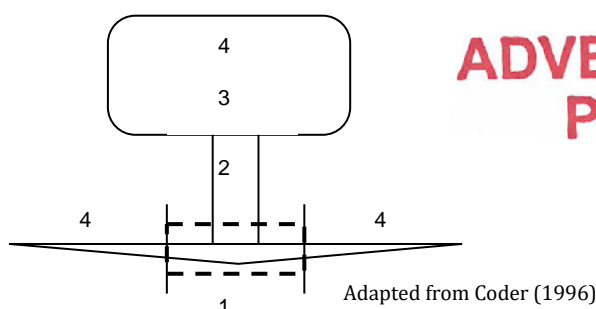
8. Structure

Assesses principal components of tree structure (Diagram 2).

Structure ratings will also take into account general branching architecture, stem taper, live crown ratio, crown symmetry (bias or lean) and crown position such as tree being suppressed amongst more dominant trees.

Diagram 2: Tree structure zones

1. Root plate & lower stem
2. Trunk
3. Primary branch support
4. Outer crown & roots



ADVERTISED PLAN

The lowest or worst descriptor assigned to the tree in any column could generally be the overall rating assigned to the tree. The assessment for structure is limited to observations of external and above ground tree parts. It does not include any exploratory assessment of underground or internal tree parts unless this is requested as part of the investigation. Trees are assessed and then given a rating for a point in time. Generally, trees with a poor or very poor structure are beyond the benefit of practical arboricultural treatments.

The management of trees in the urban environment requires appropriate arboricultural input and consideration of risk. Risk potential will take into account the combination of likelihood of failure and impact, including the perceived importance of the target(s). See table over page.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Structure Category	Zone 1 - Root plate & lower stem	Zone 2 - Trunk	Zone 3 - Primary branch support	Zone 4 - Outer crown and roots
Good	No obvious damage, disease or decay; obvious basal flare / stable in ground	No obvious damage, disease or decay; well tapered	Well formed, attached, spaced and tapered. No history of failure.	No obvious damage, disease, decay or structural defect. No history of failure.
Fair	Minor damage or decay. Basal flare present.	Minor damage or decay	Generally well attached, spaced and tapered branches. Minor structural deficiencies may be present or developing. No history of branch failure.	Minor damage, disease or decay; minor branch end-weight or over-extension. No history of branch failure.
Fair to Poor	Moderate damage or decay; minimal basal flare.	Moderate damage or decay; approaching recognised thresholds	Weak, decayed or with acute branch attachments; previous branch failure evidence.	Moderate damage, disease or decay; moderate branch end-weight or over-extension. Minor branch failure evident.
Poor	Major damage, disease or decay; fungal fruiting bodies present. Excessive lean placing pressure on root plate	Major damage, disease or decay; exceeds recognised thresholds; fungal fruiting bodies present. Acute lean. Stump re-sprout	Decayed, cavities or has acute branch attachments with included bark; excessive compression flaring; failure likely. Evidence of major branch failure.	Major damage, disease or decay; fungal fruiting bodies present; major branch end-weight or over-extension. Branch failure evident.
Very Poor	Excessive damage, disease or decay; unstable / loose in ground; altered exposure; failure probable	Excessive damage, disease or decay; cavities. Excessive lean. Stump re-sprout	Decayed, cavities or branch attachments with active split; failure imminent. History of major branch failure.	Excessive damage, disease or decay; excessive branch end-weight or over-extension. History of branch failure.

Useful life expectancy

Assessment of useful life expectancy provides an indication of health and tree appropriateness and involves an estimate of how long a tree is likely to remain in the landscape based on species, stage of life (cycle), health, amenity, environmental services contribution, conflicts with adjacent infrastructure and risk to the community. It would enable tree managers to develop long-term plans for the eventual removal and replacement of existing trees in the public realm. It is not a measure of the biological life of the tree within the natural range of the species. It is more a measure of the health status and the trees positive contribution to the urban landscape.

Within an urban landscape context, particularly in relation to street trees, it could be considered a point where the costs to maintain the asset (tree) outweigh the benefits the tree is returning.

The assessment is based on the site conditions not being significantly altered and that any prescribed maintenance works are carried out (site conditions are presumed to remain relatively constant and the tree would be maintained under scheduled maintenance programs). See table over page.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

Useful Life Expectancy category	Typical characteristics
<1 year (No remaining ULE)	Tree may be dead or mostly dead. Tree may exhibit major structural faults. Tree may be an imminent failure hazard. Excessive infrastructure damage with high risk potential that cannot be remedied.
1-5 years (Transitory, Brief)	Tree is exhibiting severe chronic decline. Crown is likely to be less than 50% typical density. Crown may be mostly epicormic growth. Dieback of large limbs is common (large deadwood may have been pruned out). Tree may be over-mature and senescing. Infrastructure conflicts with heightened risk potential. Tree has outgrown site constraints.
6-10 years (Short)	Tree is exhibiting chronic decline. Crown density will be less than typical and epicormic growth is likely to present. The crown may still be mostly entire, but some dieback is likely to be evident. Dieback may include large limbs. Over-mature and senescing or early decline symptoms in short-lived species. Early infrastructure conflicts with potential to increase regardless of management inputs.
11-20 years (Moderate)	Tree not showing symptoms of chronic decline, but growth characteristics are likely to be reduced (bud development, extension growth etc.). Tree may be over-mature and beginning to senesce. Potential for infrastructure conflicts regardless of management inputs.
21-40 years (Moderately long)	Trees displaying normal growth characteristics but vigour is likely to be reduced (bud development, extension growth etc.). Tree may be growing in restricted environment (e.g. streetscapes) or may be in late maturity. Semi-mature and mature trees exhibiting normal growth characteristics. Juvenile trees in streetscapes.
>40 years (Long)	Generally juvenile and semi-mature trees exhibiting normal growth characteristics within adequate spaces to sustain growth, such as in parks or open space. Could also pertain to maturing, long-lived trees. Tree well suited to the site with negligible potential for infrastructure conflicts.

Note that ULE may change for a tree dependent on the prevailing climatic conditions, which can either increase or decrease, or sudden changes to a tree's growing environment creating an acute stress.

The ULE may not be applicable for trees that are manipulated, such as topiary, or grown for specific horticultural purposes, such as fruit trees.

There may be instances where remedial tree maintenance could extend a tree's ULE.

9. Arboricultural Rating

Relates to the combination of tree condition factors, including health and structure (arboricultural merit), and also conveys an amenity value. Amenity relates to the trees biological, functional and aesthetic characteristics (Hitchmough 1994) within an urban landscape context. The presence of any serious disease or tree-related hazards that would impact risk potential are taken into account. See table over page.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

Arboricultural rating Category	Description
High	<p>Tree of high quality in good to fair condition; good vigour. Generally a prominent arboricultural/landscape feature. Particularly good example of the species; rare or uncommon. Tree may have significant conservation or other cultural value.</p> <p>These trees have the potential to be a medium- to long-term components of the landscape (moderately long to long ULE) if managed appropriately. Retention of these trees is highly desirable.</p>
Moderate	<p><i>General -</i></p> <p>Tree of moderate quality, in fair or better condition. Tree may have a condition, and or structural problem that will respond to arboricultural treatment.</p> <p>These trees have the potential to be a moderate- to long-term component of the landscape (moderate to long ULE) if managed appropriately. Retention of these trees is generally desirable. The following sub-categories relate predominately to age and size and amenity.</p>
	<p>A. Moderate to large, maturing tree. Contributes to the landscape character. Tree may have conservation or other cultural value.</p>
	<p>B. Moderate sized, established tree, > 50% of attainable age/size. Contributes to the landscape character.</p> <p>Maturing tree with amenity value but with identified deficiencies</p>
	<p>C. Small and/or semi-mature tree, established, >5 years in the location. May not be a dominant canopy. No special qualities.</p> <p>Maturing tree, accumulating deficiencies, trending towards being of Low arboricultural value.</p>
Low	<p>Unremarkable tree of low quality or little amenity value. Tree in either poor health or with poor structure or a combination. Short to transitory useful life expectancy.</p> <p>Tree is not significant because of either its size or age, such as young trees with a stem diameter below 15 cm. Trees regularly pruned to restrict size. These trees are easily replaceable.</p> <p>Tree (species) is functionally inappropriate to specific location and would be expected to be problematic if retained.</p> <p>Retention of such trees may be considered if not requiring a disproportionate expenditure of resources for a tree in its condition and location.</p>
Very Low	<p>Trees of low quality with an estimated remaining life expectancy of less than 5 years.</p> <p>Tree has either a severe structural defect or health problem or combination that cannot be sustained with practical arboricultural techniques and the loss of the tree would be expected in the short term.</p> <p>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. Tree infected with pathogens of significance to either the health or safety of the tree or other adjacent trees.</p> <p>Tree whose retention would not be viable after the removal of adjacent trees (includes trees that have developed in close spaced groups and would not be expected to acclimatise to severe alterations to surrounding environment – removal of adjacent shelter trees).</p> <p>Tree has a detrimental effect on the environment, for example, the tree is a recognised environmental woody weed with potential to spread into waterways or natural areas.</p> <p>Unremarkable tree of no material landscape, conservation or other cultural value.</p>

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

Trees have many values, not all of which are considered when an arboricultural assessment is undertaken. However, individual trees or tree group features may be considered important community resources because of unique or noteworthy characteristics or values other than their age, dimensions, health or structural condition. Recognition of one or more of the following criterion is designed to highlight other considerations that may influence the future management of such trees.

Significance	Description
Horticultural Value/ Rarity	Outstanding horticultural or genetic value; could be an important source of propagating stock, including specimens that are particularly resistant to disease or exposure. Any tree of a species or variety that is rare.
Historic, Aboriginal Cultural or Heritage Value	Tree could have value as a remnant of a particular important historical period or a remnant of a site or activity no longer in action. Tree has a recognised association with historic aboriginal activities, including scar trees. Tree commemorates a particular occasion, including plantings by notable people, or having associations with an important event in local history.
Ecological Value	Tree could have value as habitat for indigenous wildlife, including providing breeding, foraging or roosting habitat, or is a component of a wildlife reserve. Remnant Indigenous vegetation that contribute to biological diversity

Bibliography:

Coder, K D. (1996) Construction damage assessments: trees and sites, University of Georgia, USA

Hitchmough, J.D. (1994) Urban landscape management, Inkata Press, Australia

Gooding, R.F., Ingram, J.B., Urban, J.R., Bloch, L.B., Steigerwaldt, W.M, Harris, R.W. and Allen, E.N. (2000) Guide for plant appraisal, 9th edition, International society of Arboriculture, USA

Pollard, A. H. (1974) Introductory statistics: a service course, Pergamon Press Australia, Australia.

Standards Australia (2009) Australian Standard AS 4970-2009 Protection of trees on development sites.

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



Appendix 4: Tree protection zones.

ADVERTISED PLAN

Introduction

In order to sustain trees on a development site consideration must be given to the establishment of tree protection zones.

The physical dimensions of tree protection zones can sometimes be difficult to define. The projection of a tree's crown can provide a guide but is by no means the definitive measure. The unpredictable nature of roots and their growth, differences between species and their tolerances, and observable and hidden changes to the trees growing environment, as a result of development, are variables that must be considered.

Most vigorous, broad canopied trees survive well if the area within the drip-line of the canopy is protected. Fine root density is usually greater beneath the canopy than beyond (Gilman, 1997). If few to no roots over 3cm in diameter are encountered and severed during excavation the tree will probably tolerate the impact and root loss. A healthy tree can sustain a loss of between 30% and 50% of absorbing roots (Harris, Clark, Matheny, 1999), however encroachment into the structural root system of a tree may be problematic.

The structural root system of a tree is responsible for ensuring the stability of the entire tree structure in the ground. A tree could not sustain loss of structural root system and be expected to survive let alone stand up to average annual wind loads upon the crown.

Allocation of tree protection zone (TPZ)

The method of allocating a TPZ to a particular tree will be influenced by site factors, the tree species, its age and developed form.

Once it has been established, through an arboricultural assessment, which trees and tree groups are to be retained, the next step will require careful management through the development process to minimise any impacts on the designated trees. The successful retention of trees on any particular site will require the commitment and understanding of all parties involved in the development process. The most important activity, after determining the trees that will be retained is the implementation of a TPZ.

The intention of tree protection zones is to:

- mitigate tree hazards;
- provide adequate root space to sustain the health and aesthetics of the tree into the future;
- minimise changes to the trees growing environment, which is particularly important for mature specimens;
- minimise physical damage to the root system, canopy and trunk; and
- define the physical alignment of the tree protection fencing

Tree protection

The most important consideration for the successful retention of trees is to allow appropriate above and below ground space for the trees to continue to grow. This requires the allocation of tree protection zones for retained trees.

The Australian Standard AS 4970-2009 Protection of trees on development sites has been used as a guide in the allocation of TPZs for the assessed trees.

The TPZ for individual trees is calculated based on trunk (stem) diameter (DBH), measured at 1.4 metres up from ground level. The radius of the TPZ is calculated by multiplying the trees DBH by 12. The method provides a TPZ that addresses both the stability and growing requirements of a tree. TPZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The minimum TPZ should be not less than 2m and the maximum no more than 15m radius. The TPZ of palms should be not less than 1.0m outside the crown projection.

Encroachment into the TPZ is permissible under certain circumstances though is dependent on both site conditions and tree characteristics. Minor encroachment, up to 10% of the TPZ, is generally permissible provided encroachment is compensated for by recruitment of an equal area contiguous with the TPZ. Examples are provided in Diagram 1. Encroachment greater than 10% is considered major encroachment under AS4970-2009 and is only permissible if it can be demonstrated that after such encroachment the tree would remain viable.

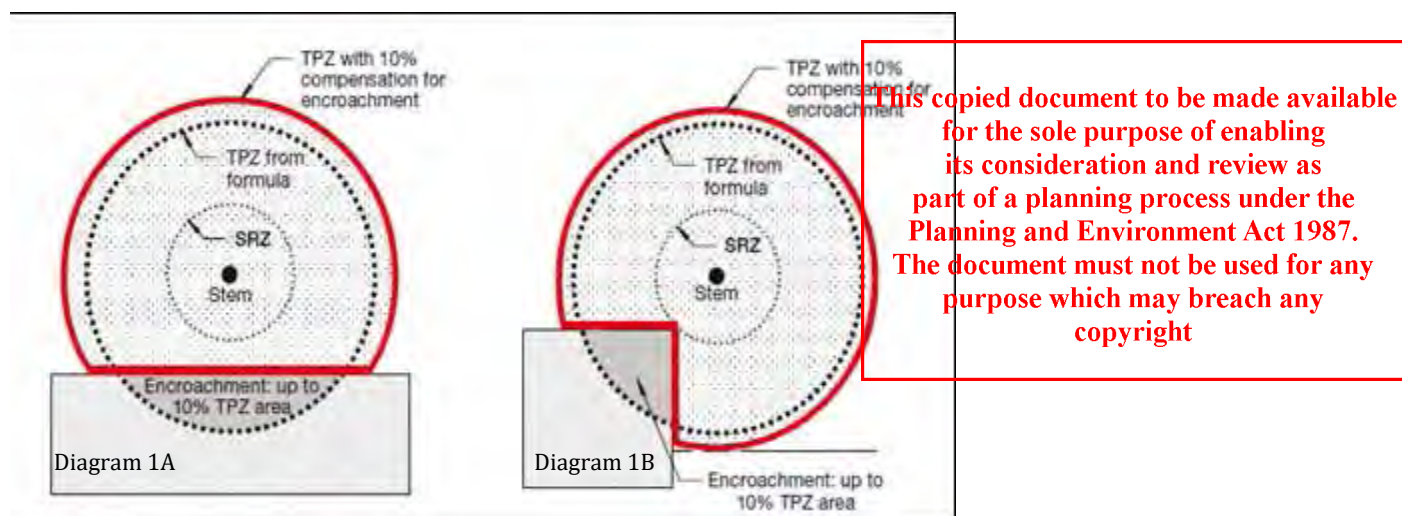


Diagram 1: Examples of minor encroachment into a TPZ.

(Extract from: AS4970-2009, Appendix D, p30 of 32)

The 10% encroachment on one side equates to approximately $\frac{1}{3}$ radial distance. Tree root growth is opportunistic and occurs where the essentials to life (primarily air and water) are present. Heterogeneous soil conditions, existing barriers, hard surfaces and buildings may have inhibited the development of a symmetrically radiating root system.

Existing infrastructure around some trees may be within the TPZ or root plate radius. The roots of some trees may have grown in response to the site conditions and therefore if existing hard surfaces and building alignments are utilised in new designs the impacts on the trees should be minimal. The most reliable way to estimate root disturbance is to find out where the roots are in relation to the demolition, excavation or construction works that will take place (Matheny & Clark, 1998). Exploratory excavation prior to commencement of construction can help establish the extent of the root system and where it may be appropriate to excavate or build.

The TPZ should also give consideration to the canopy and overall form of the tree. If the canopy requires severe pruning in order to accommodate a building and in the process the form of the tree is diminished it may be worthwhile considering altering the design or removing the tree.

**ADVERTISED
PLAN**

General tree protection guidelines

The most important factors are:

- Prior to construction works the trees nominated for tree works should be pruned to remove larger dead wood. Pruning works may also identify other tree hazards that require remedial works.
- Installation of tree protection fencing. Once the tree protection zones have been determined the next step is to mulch the zone with woodchip and erect tree protection fencing. This must be completed prior to any materials being brought on-site, erection of temporary site facilities or demolition/earth works. The protection fencing must be sturdy and withstand winds and construction impacts. The protection fence should only be moved with approval of the site supervisor. Other root zone protection methods can be incorporated if the TPZ area needs to be traversed.
- Appropriate signage is to be fixed to the fencing to alert people as to importance of the tree protection zone.
- The importance of tree preservation must be communicated to all relevant parties involved with the site.
- Inspection of trees during excavation works.

TPZ fencing

TPZ fencing must be in the form of either temporary fencing panels with concrete block feet and locked together or water filled barriers with locking pins installed. TPZ fencing must be sufficiently robust to withstand knocks and bumps from plant and machinery, delivery vehicles, storage of materials and dumping of spoil.

- Appropriate signage stating 'Tree protection Zone- No access' is to be fixed to the fencing to alert people as to importance of the tree protection zone.

Refer to Figure 1 for fencing example.



Figure 1. Above left - Example of TPZ fencing above right -Example of TPZ signage.

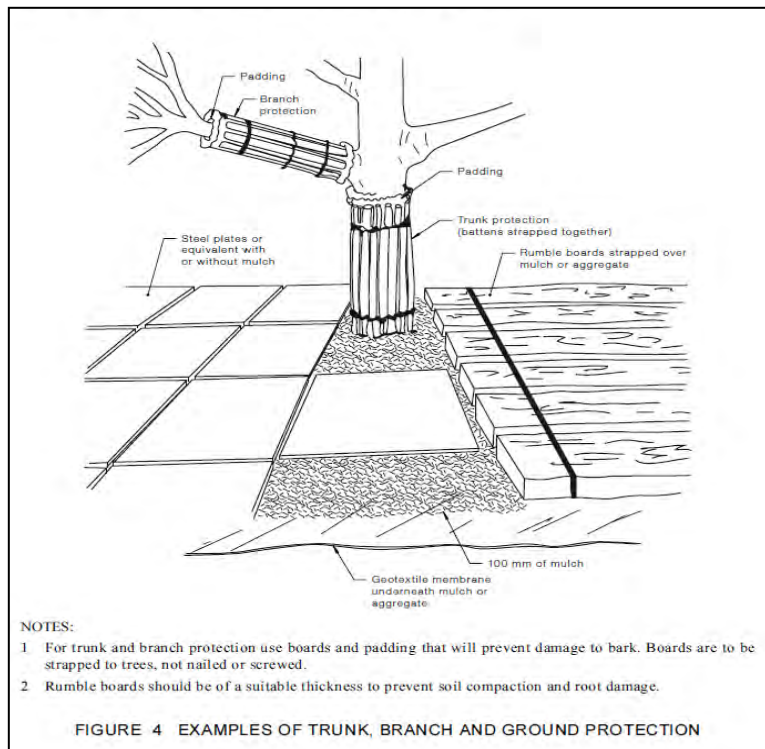
ADVERTISED PLAN

Ground buffering

Where works are required to be undertaken within the Tree root zone without penetration of the surface, ground buffering and trunk and limb protection must be provided to minimise the potential for soil to become compacted and avoid potential for impact wounds to occur to surface roots, trunk or limbs.

Refer to Diagram 2 below.

Diagram 2: Examples of ground buffering and trunk and limb protection.



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

(Extract from: AS4970-2009, Appendix D, pg17)

Exploratory excavation

The most reliable way to estimate root disturbance is to find out where the roots are in relation to the demolition, excavation or construction works that will take place (Matheny & Clark, 1998).

Exploratory excavation prior to commencement of construction can help establish the extent of the root system and where it may be appropriate to excavate or build. This also allows management decisions to be made and allows time for redesign works if required.

Any exploratory excavation within the allocated TPZ is to be undertaken with due care of the roots. Minor exploration is possible with hand tools. More extensive exploration may require the use of high pressure water or air excavation techniques. Either hydraulic or pneumatic excavation techniques will safely expose tree roots; both have specific benefits dependent on the situation and soil type. An arborist is to be consulted on which system is best suited for the site conditions.

Substantial roots are to be exposed and left intact.

Once roots are exposed decisions can be made regarding the management of the tree. Decisions will be dependent on the tree species, its condition, its age, its relative tolerance to root loss, and the amount of root system exposed and requiring pruning.

Other alternative measures to encroaching the TPZ may include boring or tunnelling.

How to determine the diameter of a substantial root

The size of a substantial root will vary according to the distance of the exposed root to the trunk of the tree. The further away from the trunk of a tree that a root is, the less significant the root is likely to be to the tree's health and stability.

The determination of what is a substantial root is often difficult because the form, depth and spread of roots will vary between species and sites. However, because smaller roots are connected to larger roots in a framework, there can be no doubt that if larger roots are severed, the smaller roots attached to them will die. Therefore, the larger the root, the more significant it may be.

Gilman (1997) suggests that trees may contain 4-11 major lateral roots and that the five largest lateral roots account (act as a conduit) for 75% of the total root system.

These large lateral roots quickly taper within a distance to the tree, this distance is identified as the Structural Root Zone (SRZ). Within the SRZ distance, all roots and the soil surrounding the roots are deemed significant.

No root or soil disturbance is permitted within the SRZ.

In the area outside the SRZ the tree may tolerate the loss of one or a number of roots. The table below indicates the size of tree roots, outside the SRZ that would be deemed substantial for various tree heights. The assessment of combined root loss within the TPZ would need to be undertaken by an arborist on an individual basis because the location of the tree, its condition and environment would need to be assessed.

Table 1: Estimated significant root sizes outside SRZ

Height of tree	Diameter of root
Less than 5m	≥ 30mm
Between 5m - 15m	≥ 50mm
More than 15m	≥ 70mm

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

References

- Bernatzky, A. 1978. *Tree Ecology and Preservation*. New York: Elsevier Publishing.
- British Standard 5837. 1991. *Guide for Trees in relation to construction*. British Standards Institute.
- Gilman, E. F. 1997. *Trees for Urban and Suburban Landscapes*. Delmar.
- Harris, R. W, Clark J.R. & Matheny N.P. 1999. *Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines, Third Edition*. Prentice - Hall, New Jersey.
- Helliwell, D. R. 1985. *Trees on Development Sites*. Arboricultural Association UK.
- Matheny, N. & Clark, J. R. 1998. *Trees and development – A technical guide to preservation of trees during land development*. International Society of Arboriculture, Publishers.
- Mattheck, C. & Breloer, H. 1994. *The Body Language of Trees* HMSO
- Mattheck C. 2002. *Tree Mechanics*, Forschungszentrum Karlsruhe GMBH
- Tattar, T. A. 1989. *Diseases of Shade Trees*, 2nd ed. San Diego: Academic Press.
- Watson, G. W. & Himelick, E. B. 1997. *Principals and Practices of Planting Trees and Shrubs*. International Society of Arboriculture.

**ADVERTISED
PLAN**

Construction Guidelines

The following are guidelines that must be implemented to minimise the impact of the proposed construction works on the retained trees.

- The Tree Protection Zone (TPZ) is fenced and clearly marked at all times. The actual fence specifications should be a minimum of 1.2 - 1.5 metres of chain mesh or like fence with 1.8 meter posts (e.g. treated pine or star pickets) or like support every 3-4 metres and a top line of high visibility plastic hazard tape. The posts should be strong enough to sustain knocks from on site excavation equipment. This fence will deter the placement of building materials, entry of heavy equipment and vehicles and also the entry of workers and/or the public into the TPZ. Note: There are many different variations on the construction type and material used for TPZ fences, suffice to say that the fence should satisfy the responsible authority.
- Contractors and site workers should receive written and verbal instruction as to the importance of tree protection and preservation within the site. Successful tree preservation occurs when there is a commitment from all relevant parties involved in designing, constructing and managing a development project. Members of the project team need to interact with each other to minimise the impacts to the trees, either through design decisions or construction practices. The importance of tree preservation must be communicated to all relevant parties involved with the site.
- The consultant arborist is on-site to supervise excavation works around the existing trees where the TPZ will be encroached.
- A layer of organic mulch (woodchips) to a depth of no more than 100mm should be placed over the root systems within the TPZ of trees, which are to be retained so as to assist with moisture retention and to reduce the impact of compaction.
- No persons, vehicles or machinery to enter the TPZ without the consent of the consulting arborist or site manager.
- Where machinery is required to operate inside the TPZ it must be a small skid drive machine (i.e Dingo or similar) operating only forwards and backwards in a radial direction facing the tree trunk and not altering direction whilst inside the TPZ to avoid damaging, compacting or scuffing the roots.
- Any underground service installations within the allocated TPZ should be bored and utility authorities should common trench where possible.
- No fuel, oil dumps or chemicals shall be allowed in or stored on the TPZ and the servicing and re-fuelling of equipment and vehicles should be carried out away from the root zones.
- No storage of material, equipment or temporary building should take place over the root zone of any tree.
- Nothing whatsoever should be attached to any tree including temporary services wires, nails, screws or any other fixing device.
- Supplementary watering should be provided to all trees through any dry periods during and after the construction process. Proper watering is the most important maintenance task in terms of successfully retaining the designated trees. The areas under the canopy drip lines should be mulched with woodchip to a depth of no more than 100mm. The mulch will help maintain soil moisture levels. Testing with a soil probe in a number of locations around the tree will help ascertain soil moisture levels and requirements to irrigate. Water needs to be applied slowly to avoid runoff. A daily watering with 5 litres of water for every 30 mm of trunk calliper may provide the most even soil moisture level for roots (Watson & Himelick, 1997), however light frequent irrigations should be avoided. Irrigation should wet the entire root zone and be allowed to dry out prior to another application. Watering should continue from October until April.

**ADVERTISED
PLAN**

Disclaimer

Tree Logic Pty. Ltd.
Unit 4, 21 Eugene Terrace
Ringwood Vic 3134

ADVERTISED PLAN

RE: Arboricultural Consultancy

Copyright notice

©Tree Logic Mar-23. All rights reserved, except as expressly provided otherwise in this publication.

Although Tree Logic Pty Ltd (ACN 080 021 610) (**Tree Logic**) uses all due care and skill in providing you the information made available in this Report, to the extent permitted by law Tree Logic otherwise excludes all warranties of any kind, either expressed or implied.

To the extent permitted by law, you agree that Tree Logic is not liable to you or any other person or entity for any loss or damage caused or alleged to have been caused (including loss or damage resulting from negligence), either directly or indirectly, by your use of the information (including by way of example, arboricultural advice) made available to you in this report. Without limiting this disclaimer, in no event will Tree Logic be liable to you for any lost revenue or profits, or for special, indirect, consequential or incidental damage (however caused and regardless of the theory of liability) arising out of or related to your use of that information, even if Tree Logic has been advised of the possibility of such loss or damage.

This disclaimer is governed by the law in force in the State of Victoria, Australia.

Reliance

This Report is addressed to you and may not be distributed to, or used or relied on by, another person without the prior written consent of Tree Logic. Tree Logic accepts no liability to any other person, entity or organisation with respect to the content of this Report unless that person, entity or organisation has first agreed in writing to the terms upon which this Report may be relied on by that other person, entity or organisation.

Report Assumptions

The following qualifications and assumptions apply to the Report:

- Any legal description provided to Tree Logic is assumed to be correct. Any titles and ownerships to any property are assumed to be correct. No responsibility is assumed for matters outside of Tree Logic's control.
- Tree Logic assumes that any property or project is not in violation of any applicable codes, ordinances, statutes or other local, state or federal government regulations.
- Tree Logic shall take care to obtain all information from reliable sources. All data shall be verified insofar as possible; however Tree Logic can neither guarantee nor be responsible for the accuracy of the information provided by others not directly under Tree Logic's control.
- No Tree Logic employee or contractor shall be required to give testimony or to attend court by reason of the Report unless subpoenaed or subsequent contractual arrangements are made, including payment of an additional fee for such services.
- Loss of the report or alteration of any part of the report not undertaken by Tree Logic invalidates the entire Report and shall not be relied upon by any party.
- The Report and any values expressed therein represent the opinion of Tree Logic's consultant and Tree Logic's fee is in no way conditional upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
- Sketches, diagrams, graphs and photographs used in the Report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural drawings, reports or surveys.
- Unless expressed otherwise: i) Information contained in the Report will cover those items that were outlined in the project brief or that were examined during the assessment and reflect the condition of those items at the time of inspection; and ii) The inspection is limited to visual examination of accessible components without dissection, excavation or probing unless otherwise stipulated.
- There is no warranty or guarantee, expressed or implied by Tree Logic, that the problems or deficiencies of the plants or site in question may not arise in the future.
- All instructions (verbal or written) that define the scope of the Report have been included in the Report and all documents and other materials that the Tree Logic consultant has been instructed to consider or to take into account in preparing the Report have been included or listed within the Report.
- The Report is strictly limited to the matters stated in it and does not apply by implication to any other matters.
- To the writer's knowledge all facts, matter and all assumptions upon which the Report proceeds have been stated within the body of the report and all opinion contained within the report will be fully researched and referenced and any such opinion not duly researched is based upon the writer's experience and observations.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.