

“GROWING MY WAY”

Tree Consultants

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EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

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Construction Impact & Management Statement & Preliminary Plan of Management

October 2023

Prepared for: ANNIE and FRED DOYLE

24 Hilma Street Collaroy Plateau NSW 2097

Prepared by: Kyle A Hill

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Diploma of Horticulture–Arboriculture TAFE, Grow SA

Certificate of Horticulture, TAFE

Certificate Advanced Tree Care TAFE

Founder -Growing My Way Tree Services (1977)

Member of International Society of Arboriculture (ISA)

Member of Arboriculture Australia

Victorian Tree Industry Organisation (VTIO)

Assisted by: Ao Wang

Master of Protected Area, Governance & Management (University of Tasmania)

Bachelor of Environmental Biotechnology (University of Technology Sydney)



1. Summary

Annie and Fred Doyle (as the Property Owners of 24 Hilma Street Collaroy Plateau NSW 2097) via Hargroves Design Consultants (Jacqui Hargrove) commissioned the Growing My Way Tree Consultancy (GMW) to prepare an *Arboriculture Impact Assessment & Management Report with Preliminary Site Specific 'Tree Plan of Management'* to be linked to a Development Application for *Alterations & swimming pool*.

The site is Land Zoned for "R2 Low Density Residential".

The document relates to trees within only the subject site (24 Hilma Street Collaroy Plateau NSW).

A total of two (2) trees are discussed.

The subject site shares common boundaries with three (3) same land zoning adjoining properties & one (1) public road (Hilma Street). All common boundaries adjoining sites are developed to contain residential dwellings, driveways & other infrastructure.

Motor vehicle & pedestrian access to the subject site is only via Hilma Street.

The sole consent authority is the Northern Beaches Council. (From herein the NBC).

Information related to the discussed trees was gathered by onsite data collection with cross referencing to:

- *NBC website, online property & environment information website tools.*
- *Site Survey by Wumara Group, dated 08 August 2023.*
- *Proposed Plans, Elevations Sections etc., by HARGROVES DESIGN CONSULTANTS, dated 06 September 2023.*
- *NSW SEPP; 10/50 Vegetation Clearing 'Code of Practice'.*
- *NBC "Tree Management Provisions".*
- *NBC Heritage Conservation Area & Land Zoning LEP Maps.*

The aim of this report is:

- 1. To confirm the viability of the discussed tree, relating to individual health, vigour & condition considering any impact foreseen by the proposed works.*
- 2. Provide a Preliminary Site Specific 'Tree Plan of Management'.*

This document supports (relative to tree management) the proposal as presented with new tree plantings so as to at a minimum replicate (at maturity) any loss of total site 'green footprint' as both discussed trees are not assessed as having long Useful Life Expectancy regardless of any proposed works.

There is ample room within the subject site to plant new locally indigenous subject site/surrounding properties plant community species.

Kyle A Hill - AQF level 5, Diploma of Horticulture / Arboriculture, (TAFE NSW & other) & AQF level 8, Post Graduate Certificate in Arboriculture, (University of Melbourne) Practicing/Consulting Arborist) with the assistance of Ao Wang (Master of Protected Area, Governance & Management (University of Tasmania) & Bachelor of Environmental Biotechnology (University of Technology Sydney) has prepared this report based on “Visual Tree Assessment” (VTA) undertaken on Monday, 25 September 2023 in the presence of the property owner/client.

Table of Contents

1. Summary	2
Table of Contents	4
2. Introduction	5
3. Methodology	6
4. Observations	7
4.1 The Site	7
The Proposal	9
4.2 The Trees – Summary Table	10
4.3 Tree & Site Images	11
5. Discussion	14
5.1 General Discussion /Tree Environments:	14
5.2 Preliminary Site Specific “Tree Plan of Management”	16
6. Conclusion	18
7. Limitations on the use of this report	19
8. Assumptions	19
9. Recommended References	19
10. Selected Bibliography	19
Appendix A – Glossary	20
Attachment A: - Tree Protection & Management Tree Protection & Management Prior to &During Construction	22

2. Introduction

This report contains observations & recommendations intended to assist in the management of the two (2) trees identified as necessary to be discussed. Both are locally indigenous species. Both are assessed to be in a state of decline.

This document only discusses trees within the proposed rear yard works. The subject site contains (plus adjoining common boundary properties) other trees not assessed as likely to be impacted by the proposed works.

We acknowledge & confirm to be familiar with the NBC “Tree Management Provisions”, specifically the documents; Warringah Local Environmental Plan 2011, (from herein Warringah LEP), Warringah Development Control Plan 2011 (from herein Warringah 11 DCP), plus the (August 2017) SEPP, Vegetation in Non-Rural Areas.

The sole consent authority is NBC.

The site is NOT within an NBC designated “Heritage Conservation Area”. Neither is the subject site or adjoining properties listed ‘Heritage Items’. The discussed trees are presumed to be naturally sown.

Information related to the discussed trees was gathered by onsite data collection with cross referencing to:

- *NBC website, online property & environment information website tools.*
- *Site Survey by Wumara Group, dated 08 August 2023.*
- *Proposed Plans, Elevations Sections etc., by HARGROVES DESIGN CONSULTANTS, dated 06 September 2023.*
- *NSW SEPP; 10/50 Vegetation Clearing ‘Code of Practice’.*
- *NBC “Tree Management Provisions.”*
- *NBC Heritage Conservation Area & Land Zoning LEP Maps.*

This document includes a Preliminary Site Specific “Tree Plan of Management”.

3. Methodology

Assessment Methodology for the discussed trees has been from ground level by eye, using *Visual Tree Assessment (VTA Stage 1)*, techniques developed by Claus Mattheck. The principles of VTA are illustrated & explained in his widely used reference textbook *“The Body Language of Trees (1994)”*.

Assessment includes:

- *Tree’s current condition & likely future health*
- *Species tolerance to root disturbance &/or development*
- *Likely present & future risk to persons & property.*
- *Tree’s (public & private landscape) amenity value, considering habitat potential.*

No root analysis, soil testing, ‘Resistograph’® drilling or aerial canopy inspection was undertaken. See the following Appendices for further information:

- *Appendix A Glossary of Common Arboreal term*
- *Attachment A Tree Protection/Management Prior to & During Construction*

4. Observations

4.1 The Site

The report discusses trees within the subject site. The subject site is 701.9 m² in size (by Site Survey from Wumara Group, dated 08 August 2023.). The subject site is linked to one (1) public road & three (3) common boundary properties developed to contain residential dwellings.

No Geotechnical issues are known to exist relative to tree management.



FIGURE 1: ABOVE ILLUSTRATES THE DISCUSSED TREES RELATIVE TO THE SITE 24 HILMA STREET COLLAROY PLATEAU NSW. (AERIAL PHOTOGRAPH ON WEDNESDAY 30 AUGUST 2023, MAP DATA COURTESY OF NEARMAP™)

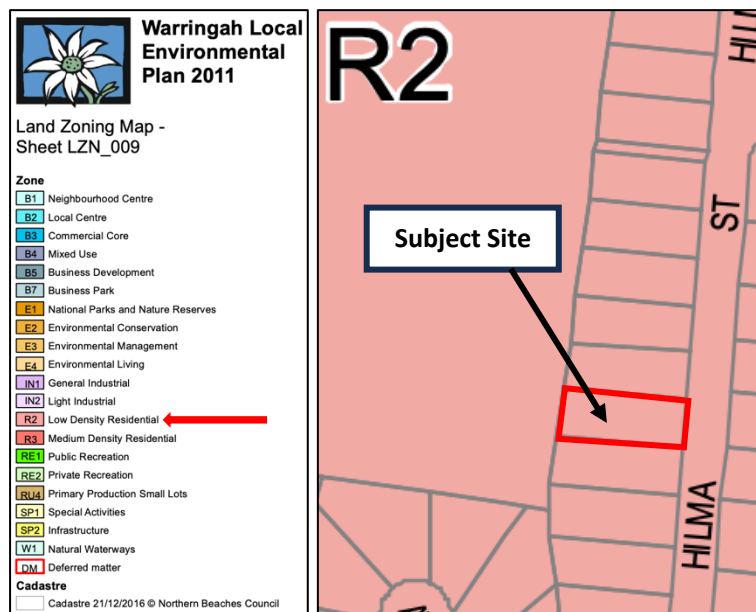


FIGURE 2: CONFIRMS STATUS OF THE SUBJECT SITE RELATIVE R2 LOW DENSITY RESIDENTIAL. (WARRINGAH LOCAL ENVIRONMENTAL PLAN 2011, LAND ZONING MAP - SHEET LZN_009).



The Proposal

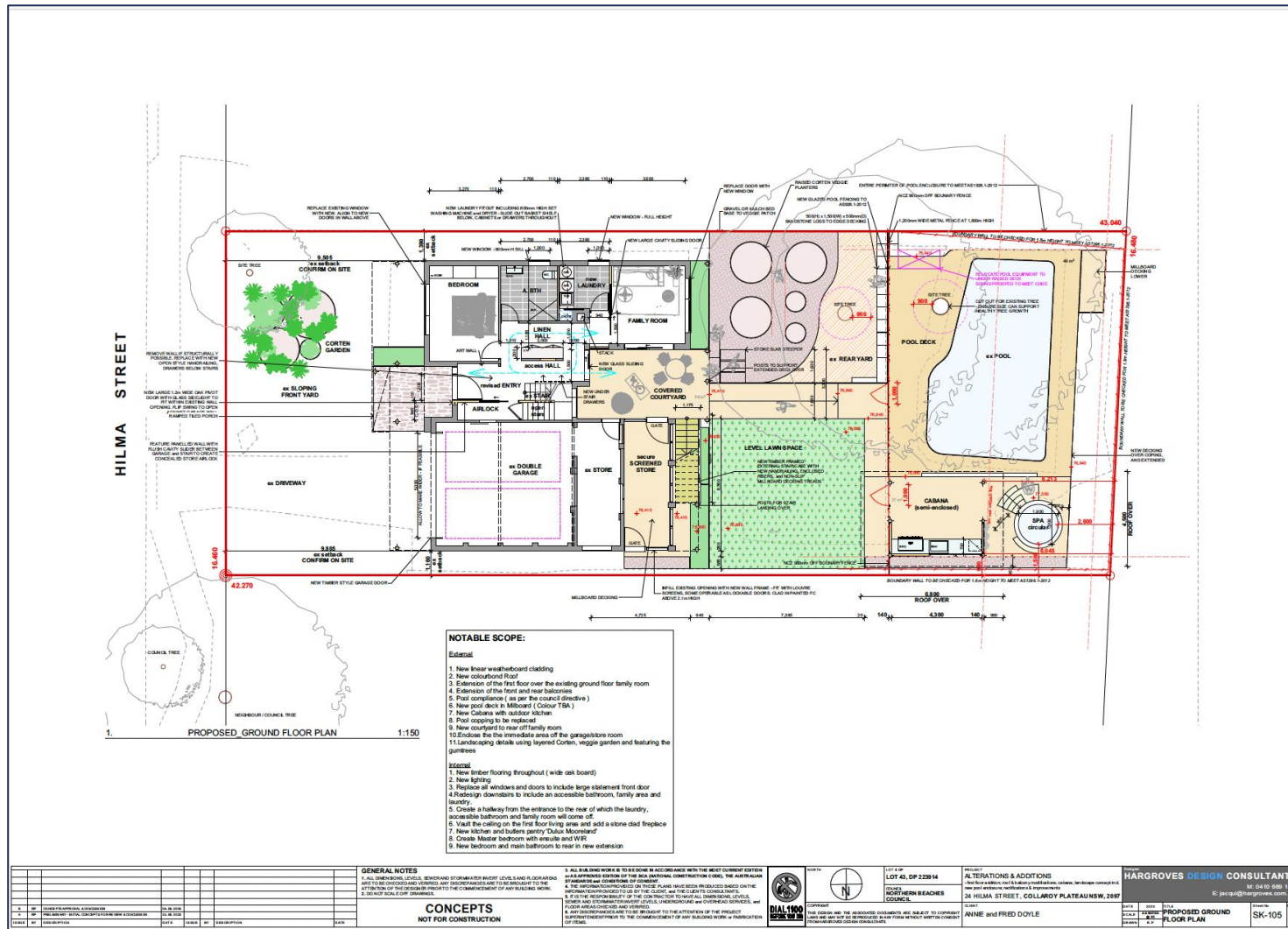


FIGURE 5: PROPOSED GROUND FLOOR PLAN

4.2 The Trees – Summary Table

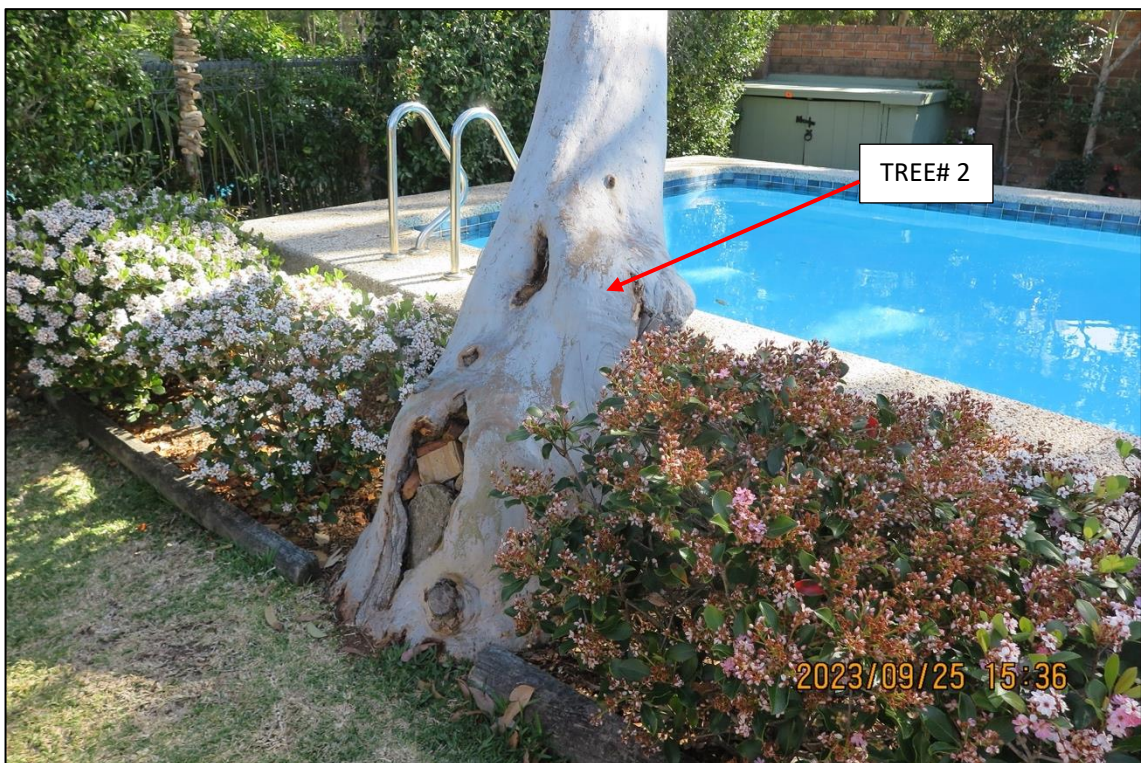
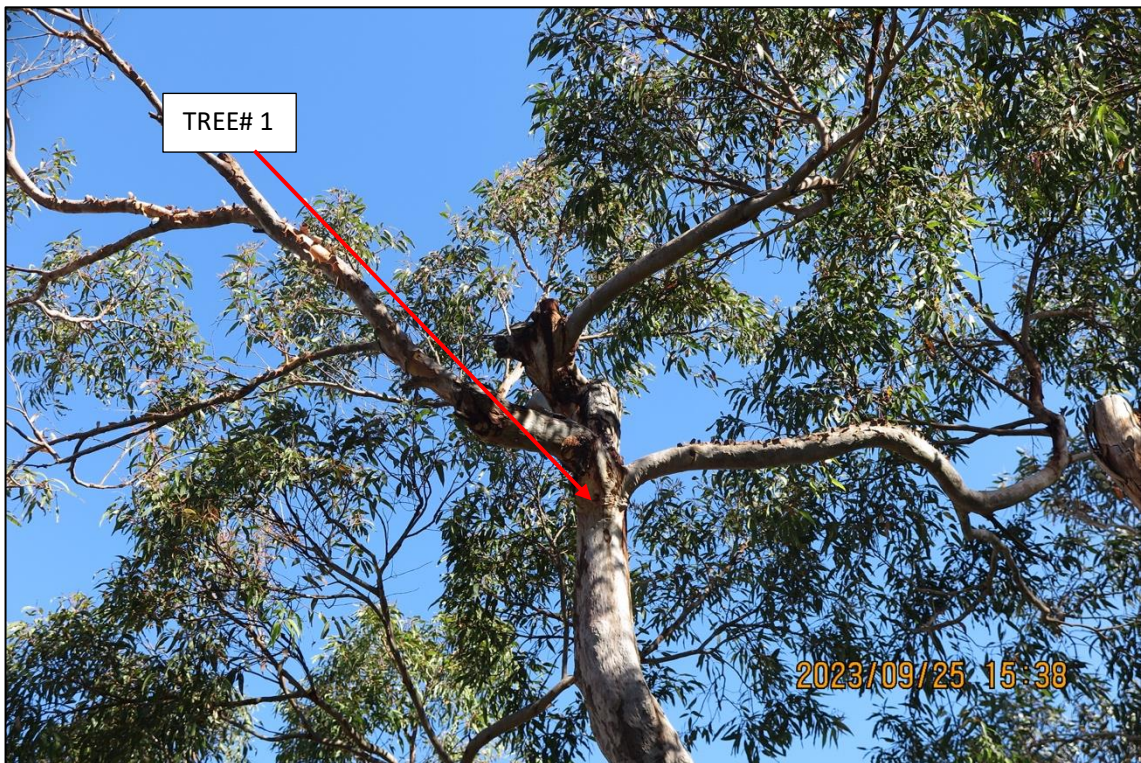
Read this table in conjunction with Appendix A– Common Arboreal Terms

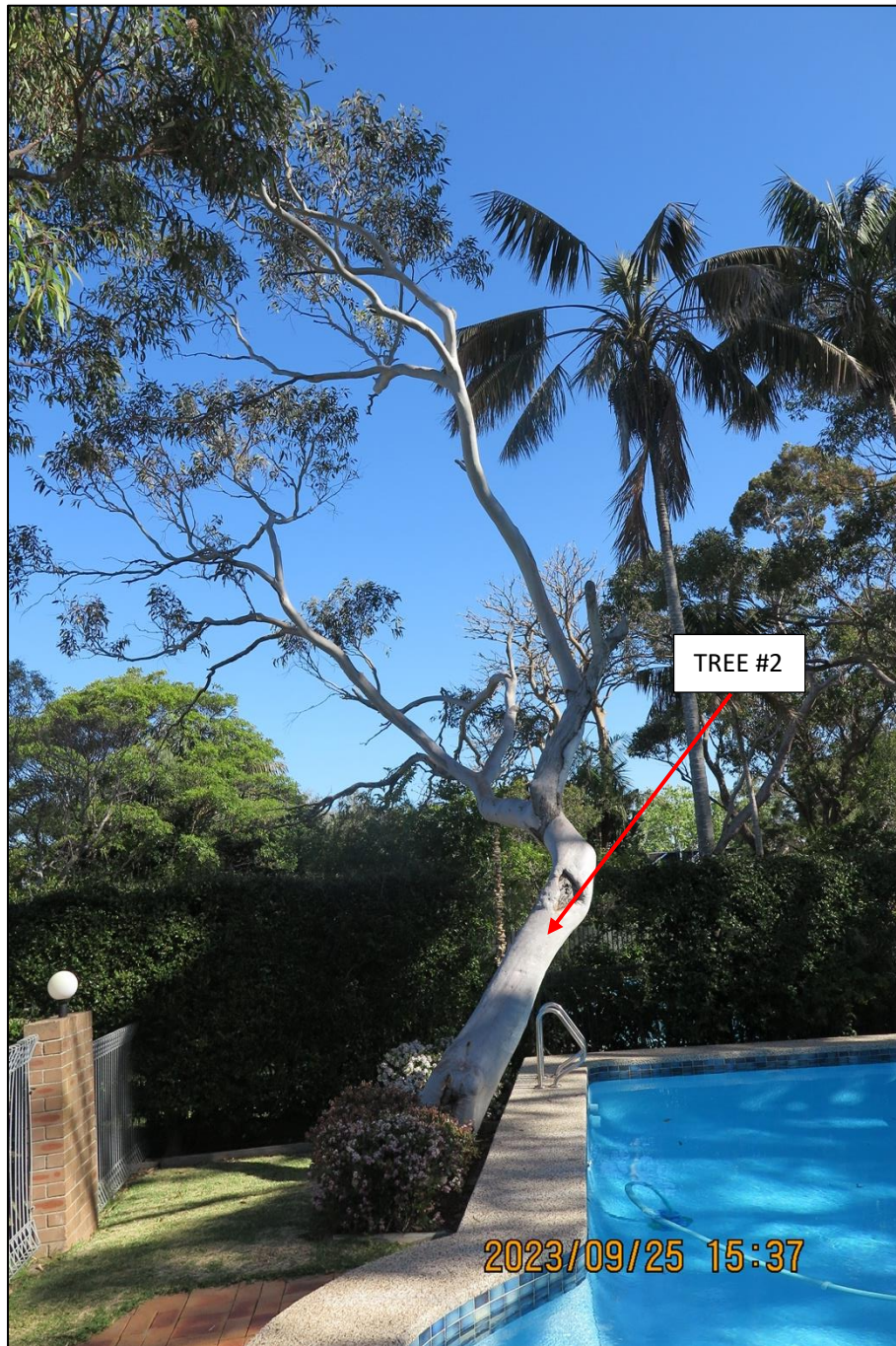
Trees Recommended for removal										Trees Recommended for retention	
Exempt or Weed species										Trees retainable but of low amenity/significance	
	Identification	Height (m)	Crown (m)	DBH (m)	TPZ (m)	SRZ (m)	Age	Health/ Vigour	Retention & Significance Value	Structure/Form	Comments
1	<i>Angophora costata</i> (Smooth-barked Apple)	<8.50	<8.00	0.48	5.76	2.61	OM	Good & Good	High & High	Atypical – tree has been topped	<u>RETAIN, PROTECT & MANAGE:</u> Tree is specified to be protected from works proposed by outside pool surrounds area being mulched (tree is isolated from works by existing & proposed new fence) & a temporary 'Tree trunk Guard'
2	<i>Eucalyptus racemosa</i> (leaved scribbly gum)	<9.50	<7.50	0.36	4.32	2.67	OM	Poor to Fair & Poor to Fair	High & High	Atypical – tree has been pruned over time to remove dead/dying branches	<u>RETAIN, PROTECT & MANAGE:</u> Tree is specified to be protected from works proposed by outside pool surrounds area being mulched (tree is isolated from works by existing & proposed new fence) & a temporary 'Tree trunk Guard'

4.3 Tree & Site Images

(Photographs taken on Monday, 25 September 2023 (Canon G1X MkII digital camera))







5. Discussion

5.1 General Discussion /Tree Environments:

The total number of trees discussed is two (2).

TREE #1 and TREE #2 are both located in the rear yard of subject site.

We believe both trees are long term compromised with respect to their individual Useful Life Expectancy because of altered ground levels. This most likely occurred when the inground swimming pool & pool surrounds were built with the soil (or at least part) of the soil excavated spread over parts of the rear yard to create a level yard.

The proposed retaining wall and footpath breaches both the TREE #1 & TREE #2 TPZ total surface areas. Soil level changes within the rear yard are minimal to nil.

TREE #1 as there is an existing.

By calculation total TPZ surface area of TREE #1 is 104.14m². The proposed retaining wall and footpath footprint equates to an approximately 15m² breach of total TPZ surface area for Tree# 2 to be 14.4% of total TPZ surface area. The breach as a mathematical number, (by AS4970-2009 provisions this equates to a Major encroachment. We contend, this is not a Major encroachment by virtue of soil level changes being minimal to nil. The only change to the existing environment is the demolition of the existing swimming pool surrounds fencing & a new footpath linking the dwelling to the swimming pool surrounds.

By calculation total TPZ surface area of TREE #2 is 58.58m². The proposed retaining wall and footpath footprint equates to an approximately 3.65m² breach of total TPZ surface area for Tree #2 to be 6.20% of total TPZ surface area. The breach as a mathematical number, (by AS4970-2009 provisions this equates to a Minor encroachment. We contend, this is not a management concern as the encroachment is less than 10% & soil level changes for the proposed works as being minimal to nil. The only change to the existing environment is the demolition of the existing swimming pool surrounds fencing & a new footpath linking the dwelling to the swimming pool surrounds.

TREE#1 whilst not being good example of its species we conclude at the time of our assessment it should have a Medium term Useful Life Expectancy. (Medium term being defined in this situation as fifteen to twenty-five years (15 to 25).

TREE #2 having been assessed as being of Poor to Fair Health & Vigour regardless of any proposed works has only a short-term Useful Life Expectancy. (Short term being defined in this situation as being less than fifteen years (<15) .

On the basis that neither discussed tree is long term viable, defined in this situation as being greater than twenty-five years (>25) we suggest new medium size at maturity new canopy trees be included as part of the new landscape concept.

Both discussed trees are specified where TPZ total surface area to exposed soils is breached by the proposed works, the installation & continued retention of a native tree mulch at a thickness of between 50mm & 75mm is considered an essential component of AS4970-2009 compliance.

No builders' materials of any description can be stored within any individual trees calculated TPZ radial distance. See page 10 "Trees Summary Table' for individual TPZ radial distances.

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Any ground level disturbance not discussed already within any individual trees TPZ radial distance must be managed/documentated by the retained Project Arborist for submission to the PCA.

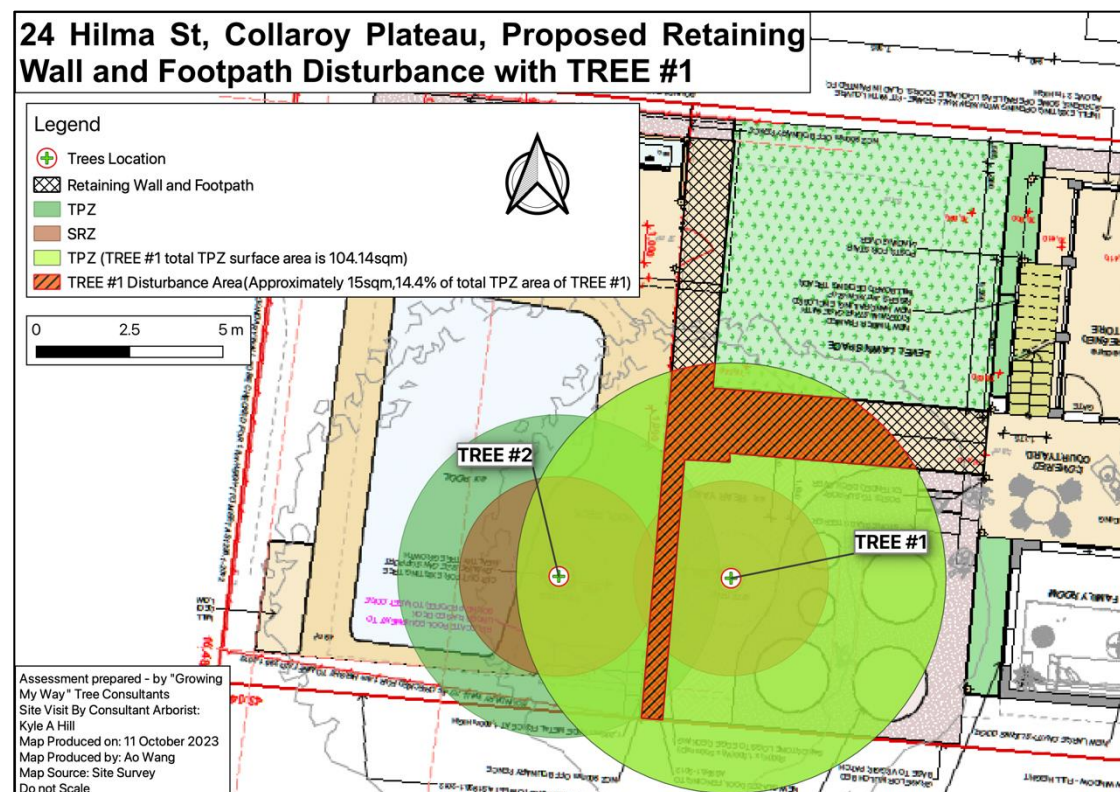
See the below potentially suitable to the subject site tree species list. (The list includes both Exotic & Australian Native species. These are not necessarily the only species potentially suitable for the subject site. We additionally, acknowledge that species availability may have an impact on the preferred chosen species.)

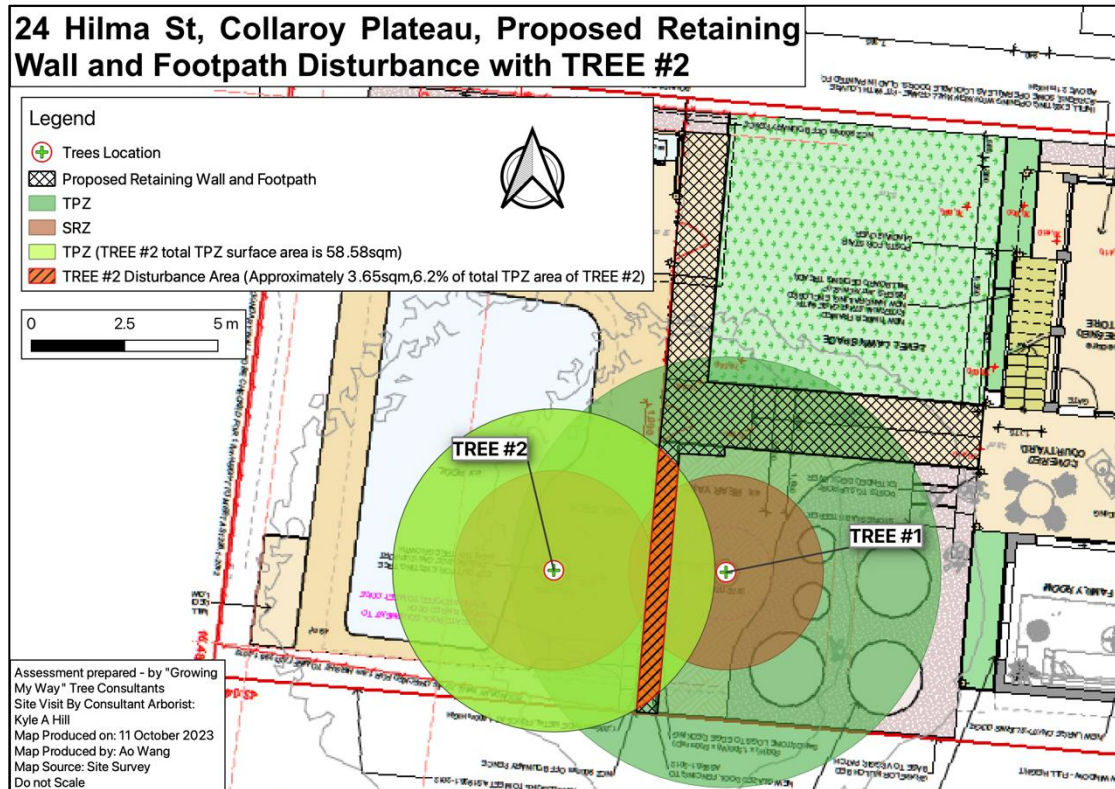
- *Acer buergerianum* (Trident Maple) as a deciduous option.
- *Backhousia citriodora* (Lemon Scent Myrtle)
- *Banksia integrifolia* (Coast Banksia)
- *Banksia serrata* (Old Man Banksia)
- *Melaleuca linariifolia* (Snow in Summer)
- *Michelia champaca* (Himalayan Magnolia)
- *Tristanopsis laurina* 'Luscious'™ (Watergum Cultivated Variety)
- *Waterhousea floribunda* 'Green Avenue'™ (Weeping Lilly Pilly)

Replacement trees are specified to be sourced from growers/suppliers whose stock meets the production benchmarks of the *Australian Standard (AS2303.2015 Tree stock for landscape use)* or *NATSPEC* specification to produce quality container produced trees.

New trees are to be professionally planted & maintained for a minimum period of six (6) months once installed.

TPZ / SRZ TREE DISTURBANCE CALCULATION DIAGRAMS





5.2 Preliminary Site Specific "Tree Plan of Management"

Pre-Commencement of Works

- Install 'temporary Tree Trunk Guards'
- Install native tree mulch.
- TPZ installations must be 'signed off' as being AS4970-2009 compliant, evidence is to be in writing with supporting photographic evidence. Document must be provided to the appointed Principle Certifying Authority.
- Any excavation (completed manually) that exposes a 'live root' of a significant diameter can only be managed & documented relative to the management strategy applied by the retained Project Arborist.

Commencement of and During Works

- Ensure the 'temporary Tree Trunk Guards' installation of Native tree mulch continues to be compliant.
- TPZ installations must be 'signed off' as continuing to be being AS4970-2009 compliant, evidence is to be in writing with supporting photographic evidence. Document must be provided to the appointed Principle Certifying Authority.
- All demolition of any existing infrastructure within any retained, managed & protected tree is to be completed manually, especially when 'live roots' of a significant diameter belonging to any retained trees may be exposed. Any exposed 'live root' must be covered until the required input & documentation from the retained Project Arborist can be obtained. Preferably, any 'live root' exposed would be covered in subject site topsoil. If this is not practicable, hessian or geotextile matting kept moist can be used until able to be covered & isolated from the proposed works.

Growing My Way Tree Services

- *Any 'live roots' of any diameter exposed ideally should be covered if not by subject site topsoil, damp, hessian, or similar suitable geotextile matting to reduce any desiccation of 'live roots' exposed to direct sunlight.*

Post Completion of Works

- *Confirm presence & condition of all required by the DA determination 'Conditions of Consent' required to be retained trees.*
- *The above is to be certified in writing with supporting photographic evidence as being as DA determination 'Conditions of Consent' plus AS4970-2009 provisions compliant relative to all required to be retained trees.*
- *All documentation from each stage of works must be provided to the appointed Principle Certifying Authority as soon as is reasonably possible post each stage of works being completed.*

New Tree Generic Specifications:

- *Replacement trees are to be sourced from growers/suppliers whose stock meets the production benchmarks of the Australian Standard (AS2303.2015 Tree stock for landscape use) or NATSPEC specification to produce quality container produced trees.*
- *New tree specimens are to be professionally planted & maintained for a minimum period of six (6) months once installed.*
- *New tree specimens are to be 45 litre container stock as the local environment has only shallow topsoil on top of sandstone bedrock. (A lack of natural topsoil depth may dictate smaller container replacement trees to be more appropriate.*

6. Conclusion

This submission in its present format can be submitted to the NBC for review by council officers.

If you have any questions relating to this report or implementation of recommendations, please contact Kyle Hill on 0412-221-962.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'K Hill', written diagonally.

Kyle A. Hill (AQF level 5 & 8 Practicing & Consulting Arborist)

7. Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation.

8. Assumptions

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, Growing My Way Tree Services, can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection.

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

9. Recommended References

Barrell, J. 1993. '*Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression*', Arboricultural Journal 17:1, February 1993, pp.

Barrell, J. 1995, '*Pre-development Tree Assessments*', in *Trees & Building Sites*, Proceedings of an International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois

Dr. G. Watson & Dr. D. Neely, '*Trees & Building Sites*', LSA Illinois USA 1995

Dr. N. Matheny & Dr. J.R. Clark, '*Trees & Development*', ISA Illinois USA 1998

Phillip J. Craul, '*Urban Soil in Landscape Design*', J. Wiley & Sons, New York USA 1992

10. Selected Bibliography

Hitchmough, J.D. 1994. '*Urban Landscape Management*', Inkata Press, Sydney.

Mattheck, C. & Breloar, H. 1994 '*Body Language of Trees*', The Stationery Office, London.

AS 4373:2007, '*Pruning of Amenity Trees*', Standards Australia.

AS 4970:2009, '*Protection of Trees on Development Sites*', Standards Australia.

BS 5837:2005, '*Guide for Trees in Relation to Construction*', Standards Board, UK.

Appendix A – Glossary

Glossary of common Arboreal terms

Age:	I	<i>Immature</i> refers to a refers to a well-established but juvenile tree
	SM	<i>Semi-mature</i> refers to a tree at growth stages between immaturity & full size
	M	<i>Mature</i> refers to a full sized tree with some capacity for further growth
	LM	<i>Late Mature</i> refers to a full sized tree with little capacity for growth that is not yet about to enter decline
	OM	<i>Over-mature</i> refers to a tree about to enter decline or already declining
	LS	<i>Live Stag</i> refers to a tree in a significant state of decline. This is the last life stage of a tree prior to death

Hth & Vig Health & Vigour

Health refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (ie. trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to be healthy but in poor condition/vigour. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Vigour refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Useful Life Expectancy (ULE) refers to any individual tree specimen's potential life

expectancy (viability) based on VTA assessment, three groups are described,

Short = Less than Five years

Medium = Five–Fifteen years

Long = more than Fifteen years

Significant diameter roots are defined as those being greater than 0.05m/50mm in diameter.

Diameter at Breast Height (DBH) refers to the tree trunk diameter at breast height (1.4 metres above ground level)

Structural Root Zone (SRZ) refers to a radial offset which relates to tree stability. This zone is presumed to be main location of the tree's structural support roots. It is calculated using the formula $SRZ\ radius = (D \times 50)^{0.42} \times 0.64$.

Primary Root Zone (PRZ) refers to a radial offset of ten (10) times the trunk DBH measured from the centre of the trunk. This zone often contains a significant amount of (but by no means all of a tree's) fine, non-woody roots required for uptake of nutrients, oxygen & water.

Tree Protection Zone (TPZ) is ideally a “No Go Zone” surrounding a tree to aid in its ability to cope with disturbances associated with construction works. **TPZ = DBH x 12**. Tree protection involves minimising root damage that is caused by activities such as construction. Tree protection also reduces the chance of a tree’s decline in health or death & the possibly damage to structural stability of the tree from root damage.

To limit damage to the tree, protection within a specified distance of the tree’s trunk must be maintained throughout the proposed development works. No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ.

A TPZ is required for each tree or group of trees within five metres (unless otherwise specified) of building envelopes.

Stem/bark inclusion refers to a genetic fault in the tree’s structure. This fault is located at the point where the stems/branches meet. In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint.

Decay refers to the break down tissues within the tree. There are numerous types of decay that affect different types of tissues, spread at different rates & have different effect on both the tree’s health & structural integrity.

Point of Attachment refers to the point at which a stem/branch etc join.

Dead wood refers to any whole limb that no longer contains living tissues (eg live leaves &/or bark). Some dead wood is common in a number of tree species.

Die back refers to the death of growth tips/shoots & partial limbs. Die back is often an indicator of stress & tree health.

One dimensional crown refers to branching habits & leaves that extend/grow in One direction only. There are many causes for this growth habit such as competition & pruning.

Crown Foliage Density of Potential (CFDP) refers to the density of a tree’s crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage.

Epicormic growth/shoots refers to growth/shoots that are/have sprouted from axillary buds within the bark. Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc.

Over Head Powerlines (OHP) Over head electricity wiring.

LVOHP Low Voltage Over head Powerlines

HVOHP High Voltage Over head Powerlines

ABC Aerial Bundled Cable

Attachment A: - Tree Protection & Management Tree Protection & Management Prior to & During Construction

The installation of Tree Protection Zone (TPZ) fencing is to be carried out prior to commencement of all works. The most suitable fencing material is 1.8m tall chain link mesh with 50mm metal pole supports, see **detail 1: tree protection fencing**.

Trunk protection “Tree Guards” are detailed (below) by generic diagram.

A mulch layer of composted leaf & woodchip to a depth of 75mm is required within the TPZ to aid in retention of soil moisture & to protect soil from contaminants. Water is to be applied by handheld or soaker/leaky hose within TPZ as required & in Accordance with Stage 3 Water Restrictions. Watering is to be carried out by either an Arborist or is to form part of the Builder’s/Contractor’s contract, with recommended fortnightly checks by an Arborist.

There is to be no stock piling of building material (including waste), machinery or any other item within the TPZ of any retained tree. Access to personnel, machinery, & storage of fuel, chemicals, cement or site sheds is prohibited

Regular monitoring of protected trees during development works for unforeseen changes or decline, will aid in the success & longevity of the retained trees.

