

Victorian Civil and Administrative Tribunal

VCAT Application for Review P2171/2015

Arboricultural Statement

10 Alvina Street, Oakleigh South

COMMISSIONED BY
Spiire Group Pty. Ltd.

PREPARED FOR
Minter Ellison

PREPARED BY
David Phillips (Ass Deg. Env Hort. Melb)
Tree Logic Pty. Ltd.

DATE
21 August 2017

Plan, manage, protect

**celebrating 20 years*



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1 Name and Address

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2 Qualifications and Experience

- 2.1 Associate Degree of Environmental Horticulture (Arboriculture Stream) – University of Melbourne, Burnley College.
- 2.2 Graduate Certificate in Garden Design – University of Melbourne, Burnley College.
- 2.3 Certificate 3 Horticulture – NMIT, Parkville
- 2.4 Certificate 2 Arboriculture - NMIT, Parkville
- 2.5 Twenty years of experience in the arboriculture/horticulture industry in Australia.
- 2.6 Senior consultant arborist at Tree Logic Pty. Ltd.
- 2.7 Projects include large scale tree assessment and data collection; residential and commercial tree development reports; tree impact assessments, tree management plans; site arborist responsibilities on various completed and on-going construction sites.
- 2.8 Kindergarten Risk Assessments for City of Kingston, Boroondara, Stonnington and Shire of Cardinia.
- 2.9 Parks and Council Property Risk Assessments for City of Boroondara and Mount Alexander Shire.

3 Area of expertise

- 3.1 My experience involves the management of trees in the urban landscape. Specifically, tree management in the context of state and local planning frameworks, tree risk assessment and general assessment of tree condition. Providing management strategies for urban trees on public and private land.

4 Expertise to make the report

- 4.1 Tree assessments to establish tree health, tree structure, risk potential, arboricultural values and the appropriate management thereafter are core components of Tree Logic's business activities.
- 4.2 Twenty years of experience in the arboriculture/horticulture industry in Australia.
- 4.3 Five years as a consultant arborist with experience in tree inspection, report preparation, assessment regarding tree retention value, site suitability and impacts to trees.

5 Instructions

- 5.1 The instructions provided to Tree Logic on behalf of Minter Ellison was to peer review the arboricultural report issued by Galbraith & Associates, dated 21st July, 2017 and provide an arboricultural statement for a proposed residential development at 10 Alvina Street, Oakleigh South (former Clayton West Primary School).

6 Documents Reviewed

- 6.1 The material provided and sourced included:
- The site falls within the Monash Planning Scheme and is covered by Schedule 1 to the General Residential Zone (GRZ1) (Planning Schemes online, (www.dtpli.vic.gov.au/planning cited 03/08/2017).
 - Schedule 5 to the Development Plan Overlay (DP05) applies to the site.
 - Clause 52.17 of the Monash Planning Scheme relating to native vegetation applies to the site as it is greater than 4,000 m² in size.
 - Clause 22.05: City of Monash Tree Conservation Policy applies to all land within the municipality.
 - The Conservation Policy aims to maintain, enhance and extend the Garden City character throughout Monash ensuring that new development and re-development is consistent with and contributes to the Garden City character by promoting the retention of mature trees and encourage the planting of new canopy trees with spreading crowns.
 - DPO Submission development plans, Prepared by Rothe Lowman, Project No. 214174, dated 24/07/2017.
 - Landscape Plan, Prepare by John Patrick Landscape Architects, Job No. 16-999, Dwg No. L-VCAT01, Dated 07/2017.
 - Arboricultural Report for 10 Alvina Street, Oakleigh South, Prepared by Galbraith & Associates, Dated 21/07/2017.
 - Arboricultural Report for 10 Alvina Street, Oakleigh South, Prepared by Galbraith & Associates, Dated 21/11/2014.

7 Facts, matters and assumptions

- 7.1 An arboricultural report was prepared by Galbraith & Associates in November 2014 that summarised the tree population within and adjacent to the subject site, including a tree assessment table and tree location plan. The report identified approximately 100 trees on the site of varying age, species and overall tree size. One of these trees was possibly a remnant self-sown individual. Other trees present included large, mature specimens of Australian and exotic species. Lesser specimens in terms of size, health and/or structure of Australian native and exotic species were also present. Two weed species native to Victoria were also identified, as well as other Victorian natives that were mostly over-mature in age and/or structurally poor specimens. See Appendix 3 for arboricultural assessment report.
- 7.2 A following report prepared by Galbraith & Associates was issued in 2017 after a second site visit to inspect the tree population for any changes and undertake a review of the proposed design. No major changes to the condition of tree population was noted in the second Galbraith report. A subsequent design review noted a total of five (5) trees within the site and all neighbouring trees were to be retained within the development. The report concluded that sufficient space had been provided around all the trees to be confident of their successful long-term retention. The neighbouring trees were also unlikely to be affected, with the exception of tree 5, which has been

recommended for removal as it was considered 'dangerous'. See Appendix 2 for arboricultural assessment report with design review.

- 7.3 In preparation for this expert witness statement, I undertook a site inspection on Monday 14th August, 2017 to inspect the trees and site conditions. Tree dimensions were noted for those considered for retention and in the neighbouring properties to provide an accurate review of the design and Galbraith reports.

8 Observations

- 8.1 The site visit identified a Gum tree in the neighbouring southern property had been removed. This tree was identified as Tree 6 in the Galbraith arboricultural report.
- 8.2 There were no trees located within road reserve outside the subject site. Several trees were located in close proximity to the title boundary; five (5) were located in the former quarry site to the south-west, three (3) trees located at 13 Ashbrook Court and one (1) tree at 29 Scotsburn Avenue to the south east of the subject site.
- 8.3 The trees within the site had generally been planted around the site perimeter with scattered specimens throughout the remainder. Planted individuals formed a cluster of trees to the north and south-west of the site.
- 8.4 A close planting of six (6) Willow Peppermints (*Eucalyptus nicholii*) were noted in the south-west section of the site. These trees were captured as Tree 28 within the tree assessment table of the Galbraith report.

9 Discussion

- 9.1 A review of the 2014 and 2017 arboricultural reports, prepared by Galbraith and Associates was undertaken.
- 9.2 Ninety-nine (99) trees in total were identified within the tree assessment table of the Galbraith reports.
- 9.2.1 As discussed earlier, one neighbouring tree has been removed.
- 9.2.2 One (1) additional tree was noted within the former quarry site that was not captured in the Galbraith report. This tree has the potential to be impacted under the proposed design and its details can be seen in Table 1.

Table 1: Tree assessment detail.

Tree Name	Gippsland Manna Gum (<i>Eucalyptus pyroriana</i>)
Tree origin	Indigenous
Tree Age	Mature
Height X Width (m)	14 X 13
DBH (cm)	42 cm @ 1.4 metres from ground level
Health	Fair
Structure	Fair-poor
Comments	One side of tree viewed only.
Tree Location	Located in the Huntingdale Quarry site approximately 3m from title boundary and 1 m to the south-west of tree 21.

Tree protection zone (TPZ)	5.0 m radius
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- 9.3 The overall tree population contained several large, mature specimens as well as smaller individuals in varying degrees of condition.
- 9.4 Galbraith noted tree 4, a Drooping She-oak (*Allocasuarina verticillata*) was possibly a self-sown remnant tree. This tree was an over-mature specimen, small to medium in size exhibiting extensive trunk decay. The report is correct in saying that the tree is getting close to the end of its useful life expectancy. As the extent of decay continues to progress the wood strength will continue to deteriorate leading to trunk failure in the short-term future. This defect is unpredictable and would exacerbate if the tree becomes suddenly exposed from the removal of adjacent vegetation. The short useful life expectancy and condition of the tree reduces its retention value from an arboricultural perspective and the tree should not be a constraint on the proposed development. The species is available from indigenous nurseries and could be replaced within new landscape plantings.
- 9.4.1 In terms of identifying whether the tree is remnant to the site, Drooping She-oak was listed within the EVC 175 – Grassy Woodland of the Gippsland Plain Bioregion that surrounds the site. Its location within the site close to the Huntingdale Quarry where other indigenous tree species are located could suggest that the tree was part of a remnant patch that had mostly been cleared.
- 9.5 Tree 36, a Coastal tea-tree (*Leptospermum laevigatum*) was identified as potentially being a remnant specimen. The shrub had not reached maturity and displayed typical health and structure for the species. The Galbraith report was unsure as to whether the tree was naturally occurring in the area prior to European occupation and that it may only recently invaded the area, perhaps due to lack of fire. Based upon the EVC 48 – Heathy Woodland and the surrounding EVC, 175 the species was not listed as a part of those vegetation communities. The species is often a dominant shrub on coastal sands (Costermans, 2006) and can be found growing within the bayside suburbs of Metropolitan Melbourne. Although, it can become an environmental weed when introduced outside its normal habitat and has spread further inland since European settlement (Gray & Knight, 2001). Therefore, it is not expected for the species to be naturally occurring within the subject site prior to European settlement.
- 9.6 The remaining trees were planted within the site, with the exception of the Sallow Wattle (*Acacia longifolia*) and most likely Sweet Pittosporums (*Pittosporum undulatum*). Several of the planted trees were mature, large and prominent specimens in Fair or better condition for the species. These large trees dominated the site in terms of amenity and landscape value with the remaining trees of lesser size. These lesser sized trees varied in condition (health and structure) and suitability for retention. The Brush Box (*Lophostemon confertus*) trees scattered across the site were generally in fair overall condition. The remaining Australian native species generally displayed below typical condition.
- 9.7 The subject site had been vacant and derelict for some time which allowed the Sallow Wattles to develop unmanaged resulting in them becoming naturalised (weedy in nature) with mature specimens and seedlings observed across the site. The vigorous development of the Wattle trees is expected to continue unless they are managed to control their spread.
- 9.7.1 The lack of site management also allowed several Sweet Pittosporum trees to mature. This species is recognised for its negative environmental impact within the City of Monash under Schedule 1 to the Vegetation Protection Overlay (VPO1). Although the overlay does not apply to this site, the potential impact of the species should not be ignored in other parts of the municipality.
- 9.8 The small number of exotic specimens, including trees 9, 14, 37, 42, 49 and 56 located across the site all displayed a health and/or structural problem. The largest of these trees, being tree 14, a Weeping Willow (*Salix Babylonica*) showed symptoms of decline including, excessive trunk and limb decay and the loss of the tree is expected in the short-term.

Design Review

- 9.9 A review of the proposed design was undertaken to assess the impacts to the trees nominated for retention and those growing in neighbouring properties. The proposed Master Plan can be seen in Appendix 1.
- 9.9.1 Design plans reviewed include; Demolition Plan (TP0.02), Master Plan (TP1.10), Site Plan – Ground Level (TP1.11) and Landscape Plan (L-VCAT01).
- 9.10 The Demolition Plan nominates High and Medium value trees for retention under the proposed development concept. Those earmarked for removal were also shown on the plan. The retention value that was applied to the trees have been taken from the Galbraith arboricultural report based upon the WOR (worth of retention rating). The plan shows fourteen (14) trees in total are nominated for retention;
- Four (4) trees with a WOR of 7 – 8 are nominated for retention, being trees 1, 2, 8 and 11.
 - One (1) tree with a WOR of 5 is nominated for retention, being tree 71.
 - All nine (9) trees located within close proximity to the title boundaries are nominated for retention, including trees 5, 9, 21, 22, 23, 25, 34, 35 and 45.
- 9.11 The plan shows that eighty-four (84) trees in total are to be removed. They include;
- One (1) tree with a WOR of 6 and one (1) tree of 5-6 WOR, being trees 10 and 60.
 - Twenty (20) trees with a WOR of 5, being trees 3, 17, 20, 24, 30, 31, 38, 41, 46, 48, 54, 65, 67, 77, 78, 79, 81, 82, 86 and 92.
 - Fourteen (14) trees with a WOR of 4 are to be removed, being trees 4, 7, 12, 13, 18, 27, 51, 53, 59, 62, 63, 65, 68 and 75.
 - One (1) tree with WOR of 3-4, being tree 28 is to be removed.
 - Forty-seven (47) trees with a WOR of 3 or less are nominated for removal.
- 9.12 In terms of the tree retention ratings, the design plan has divided the trees into High, Medium and Low ratings. While Galbraith has not divided the WOR into these categories it appears they have been the basis for determining tree retention by the design team. In consideration of tree retention, it is considered reasonable to categorise the assessed trees into High, Medium and Low retention values based upon the WOR rating system within the proposed site development.
- 9.13 Under the proposed development plan, trees 1, 2, 8, 11 and 71 are nominated for retention. Galbraith has assessed the impact to these trees and concluded *'adequate space has been provided around all trees in order to be confident of their long term retention'*. He also states that *'some pruning will be required but the amount necessary to be pruned off will have no impact on the long term safe useful life expectancies'*.
- 9.14 I have reviewed the proposed design and found that some of the TPZs are to be encroached by the proposed redevelopment. Tree 8, a Smooth-barked Apple (*Angophora costata*) and tree 11, an English Oak (*Quercus robur*), are to be encroached by 7 % and 5.6 % respectively by the adjacent residences. The landscape plan shows additional encroachment from a path within the TPZ of tree 11 however, this element could be constructed in such a way as not to impact upon the tree. Encroachment of less than 10 % is generally permissible under *AS4970 2009 Protection of trees on development sites* and both trees are expected to tolerate this amount of encroachment based upon their good condition and additional area contiguous with the TPZ is available within the subject site for new root development.
- 9.14.1 Tree 11 has a low spreading canopy that extends 18 m across from east to west and the proposed residences are located approximately 7 m from the trunk on either side. To construct these residences canopy pruning would be required to provide adequate building clearance. The extent of pruning is not expected to impact upon the long term condition of the tree however, its low, spreading canopy forms part of its high amenity value. The proposed design in my view does not maintain sufficient clearance around the tree's canopy. The built form should complement the

tree's natural shape as opposed to 'squeezing' the tree into the design. It is recommended that there is greater offset distance of the residences to the east and west to encompass the existing canopy extent and avoid the need for structural pruning.

- 9.14.2 The residences adjacent to trees 1, 2 and 71 are at or outside their TPZ area and no impact to them is expected under the reviewed design. Canopy pruning would be required to provide sufficient building clearance, however their long – term condition or form is not expected to be adversely impacted.
- 9.15 In regards to the neighbouring trees, Galbraith states '*none of the neighbouring trees are likely to be affected, with the exception of tree 5*'. It is claimed that the tree owner has no objection to Tree 5 being removed of which Galbraith strongly recommends. My assessment of the tree noted a branch tear out on the eastern trunk and the western trunk had failed. The scaffold branches overhanging the site were crossing over and the union appeared to harbour decay. Overall, the tree displayed poor structure and would present an increased risk to the adjacent residents. I agree with Mr Galbraith that the tree should be removed and written confirmation of its removal should be sought from its owner. If the tree owner is unwilling to remove the tree, an increased area surrounding the tree should be allocated within the design to accommodate its poor structure.
- 9.16 An assessment of the impact to the neighbouring trees, being trees 5, 9, 21, 22, 23, 25, 34, 35 and 45 was also undertaken. Tree 5 has been recommended for removal and will not be considered under the current design review. With the exception of tree 9, the proposed building footprints are outside the TPZ of each tree and no impact to them is expected.
- 9.16.1 Tree 9, a Desert Ash (*Fraxinus angustifolia*) is to incur a 7 % encroachment into its TPZ. Desert Ash trees have a high tolerance to root loss and it would be expected for the tree to tolerate this minor amount of encroachment. Canopy pruning would be required to raise the overhanging canopy from the adjacent residence. The extent of pruning is not expected to impact upon the long-term condition of the tree, given that the Level 1 setback of the adjacent dwelling is greater than the ground floor from the southern boundary.
- 9.17 The additional Gippsland Manna Gum (See Table 1) was also assessed to determine whether the tree would be impacted under the proposed site development. The tree is located approximately 3 m from the property boundary and has a radial TPZ of 5 m, which extends 2 m into the subject site. The proposed setback of the adjacent residences are approximately 4 m from the western boundary which is outside the TPZ area. Under the proposed design, the long-term condition of the tree is expected to be maintained.
- 9.18 The proposed shadow analysis plans were also reviewed. The review was undertaken to assess whether the retained trees were to incur a reduction in sun exposure that is vital for ongoing physiological processes.
- 9.18.1 The majority of the retained trees within the site are large, mature specimens (trees 2, 8 and 11) that are taller than the proposed buildings and so no reduction in light for these trees is expected.
- 9.18.2 Tree 1 will have a reduction in the earlier morning sun, however, by 12pm it is expected to receive full sun for the remainder of the day. Tree 71 will also have a reduction in light levels in the early morning and late afternoon periods. It is expected that both trees will adapt and tolerate to the new light levels as it is not considered to be significantly reduce to levels that would negatively impact upon their ongoing physiological processes.
- 9.19 The sun exposure levels were also assessed for the trees located in the neighbouring properties.
- 9.19.1 Trees 21, 22, 23 and 25 are located in the adjacent quarry site that are already partly shaded by trees within the subject site. The shadow plan shows they are expected to receive full sun after 10am. Under the proposed design and with the removal of adjacent trees, they are expected to be exposed to an increase in light levels, which they would adapt to and tolerate. It should be noted that tree 23 was dead and its consideration in this matter is not required.
- 9.19.2 The extent of shadowing along the southern property boundary is expected to have a negligible impact upon these neighbouring trees (trees 9, 34 and 35) as they of a height likely taller than the proposed residences.

- 9.19.3 Tree 45 was a small Peach tree (*Prunus persica*) that is located close to the eastern boundary. The tree will experience reduced light levels in the afternoon from 3pm onwards. The tree is expected to adapt to and tolerate this minor reduction in light however, the time required for its fruits to ripen may be extended.
- 9.20 A review of the landscape plan was also undertaken as part of determining the impacts to retained trees. The plan shows that a path is proposed within the TPZ of tree 11. To minimise impact to the tree, it is recommended that the path be constructed of a permeable material, such as granitic sand or the like and above the existing soil grade. The plan shows no other landscape design elements within the TPZ of retained trees. Mature trees are more sensitive to site disturbance and new landscape plantings beneath their canopy should respect their water needs and minimise the planting depth of shrubs, herbs and grasses.
- 9.21 Galbraith has stated that *'tree protection measures will have to be drawn up and put into place before, during and after the construction period for all retained trees within the proposed site development'*. In response to this, it is recommended that a Tree Protection Management Plan (TPMP) is prepared by a qualified arborist to the satisfaction of the Responsible Authority and incorporated into the conditions of permit. The TPMP is to outline the tree protection measures to preserve the condition of retained trees prior, during and after construction and in accordance with AS4970. This document would become a guide for contractors on tree management for the duration of the site development.

10 Permit Requirements

- 10.1 Clause 51.17 of the Monash Planning Scheme relating to native vegetation applies to the site as it is greater than 4,000m² in size. 52.17 relates to vegetation native to Victoria.
- 10.2 Tree 4 could be subject to permit and offset requirements under 52.17, which would need to be determined by an ecologist or other suitable professional.
- 10.3 The remaining trees, with the exception of Sallow Wattles and Sweet Pittosporums that are native to Victoria are not naturally occurring within the site and have been planted for ornamental or amenity purposes and therefore, would be exempt from 52.17 under 52.17-7, Table of Exemptions.
- 10.3.1 Tree 36, a Coastal Tea-tree and Sallow Wattles, both Victorian natives do not naturally occur within the site. I am of the opinion that the intent of Clause 52.17 is to identify scattered remnant trees or remnant patches of vegetation of which both these species are not considered to be. Therefore, both species would also be exempt from 52.17.
- 10.4 There are no other planning overlays relating to tree management that apply to the site. Therefore, the remaining trees native Australia and exotic specimens do not require a permit if they are to be removed, lopped or destroyed.

11 Summary of opinions

- 11.1 A review of the site confirmed that ninety-eight (98) of the ninety-nine (99) trees within the Galbraith and Associates report still existed. It was noted that Tree 6 located in a neighbouring southern property had been removed. One (1) additional tree was noted within the neighbouring quarry site that was not captured in the Galbraith report. The details of this tree can be seen in Table 1 on page 4.
- 11.2 Galbraith attributed each tree with a worth of retention (WOR) rating. I would generally concur with these ratings based upon my inspection of the site, particularly those trees of High significance (WOR OF 7 & 8). A discrepancy between the lower ratings could be debated, however this would add little valuable information to tree retention within the site.
- 11.3 Tree 4, a Drooping She-oak is likely to have formed part of a remnant patch of vegetation. This tree could be subject to permit and offset requirements under Clause 52.17, relating to native vegetation, which would need to be determined by an ecologist or other suitable professional. The

remaining trees within the subject site were planted specimens for ornamental or amenity purposes and would not be subject to 52.17. I also believe that the Coastal Tea-tree and Sallow Wattles be exempt from 52.17 as they are not naturally found within the subject site.

- 11.4 A review of the proposed design was undertaken as part of this peer review. Trees nominated for retention can be seen in Point 9.10 and those trees nominated for removal can be seen in Point 9.11 on page 6. My appraisal of the design found the ongoing condition of the trees nominated for retention would be maintained under the current design proposal, which includes the trees in neighbouring properties.
- 11.5 Minor reduction in light availability could be experienced by trees 71 and 45, which they are likely to adapt to however, the ripening time of fruit on tree 45 could be extended.
- 11.6 Further setback of the two residences to the east and west of tree 11 is recommended to avoid canopy pruning and maintain the spreading form of the English Oak.
- 11.7 Canopy pruning would be required for trees 1, 2 and 71 to provide sufficient canopy clearance from the proposed development. The pruning requirement for these trees is to form part of the TPMP. Any pruning required to manage the other retained trees should also form part of the TPMP.

12 Recommendations

- 12.1 Increase the offset distance of the residences to the east and west of tree 11 to the canopy extent is a minimum to avoid the need for structural pruning of the Oak tree.
- 12.2 Written confirmation for the removal of Tree 5 should be sought from its owner. If the tree owner is unwilling to remove the tree, an increased area surrounding the tree should be allocated within the proposed design.
- 12.3 Within the landscape design, the proposed path beneath tree 11 is to be permeable in nature, such as granitic sand or the like and constructed above the existing soil grade.
- 12.4 Where trees are retained within the proposed redevelopment, it is recommended that a Tree Protection Management Plan (TPMP) be prepared by a suitably qualified arborist in accordance with AS4970 and to the satisfaction of the responsible authority. The TPMP should form part of the permit conditions.

13 Accuracy, completeness and scope

- 13.1 The accuracy, completeness and scope of the report are appropriate in relation to the instructions given and the documents considered.

14 Declaration

I certify to the best of my knowledge and belief that:

- That the statements of fact contained in the above report and valuations are true and correct.
- That the valuation analysis, opinions and conclusions are limited only by the reported assumptions and limiting conditions and they are my personal, unbiased professional analysis, opinions, and conclusions.
- That I have no personal interest or bias with respect to any party involved in the above claim.
- That my compensation is not contingent upon supplying a predetermined value or direction that favours the cause of the client, the amount of the value estimate or the occurrence of a subsequent event.
- That my opinion is based upon the facts supplied to me at this time. If further information is disclosed, I may have further opinions.
- That I have made all the inquiries that I believe are desirable and appropriate and that no matter that I believe to be significant or relevant to this report has, to my knowledge, been withheld from the report.
- 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 valuation.



David Phillips (Ass. Deg Env Hort. Melb)

Senior Consultant Arborist

Treelogic Pty Ltd

References

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

Costermans. L, 2006, *Native Trees and Shrubs of South-eastern Australia*, Reed New Holland Publishers (Australia) Pty Ltd, Sydney.

Gray. M & Knight. J (eds), 2001, *Flora of Melbourne – A Guide to the Indigenous Plants of Greater Melbourne Area*, Australian Plants Society Maroondah, Inc, 3rd Edition, Hyland House, Melbourne.

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- 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 this report have been included or listed within the report.
- 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 have been fully researched and referenced and any such opinion not duly researched is based upon the writers experience and observations.

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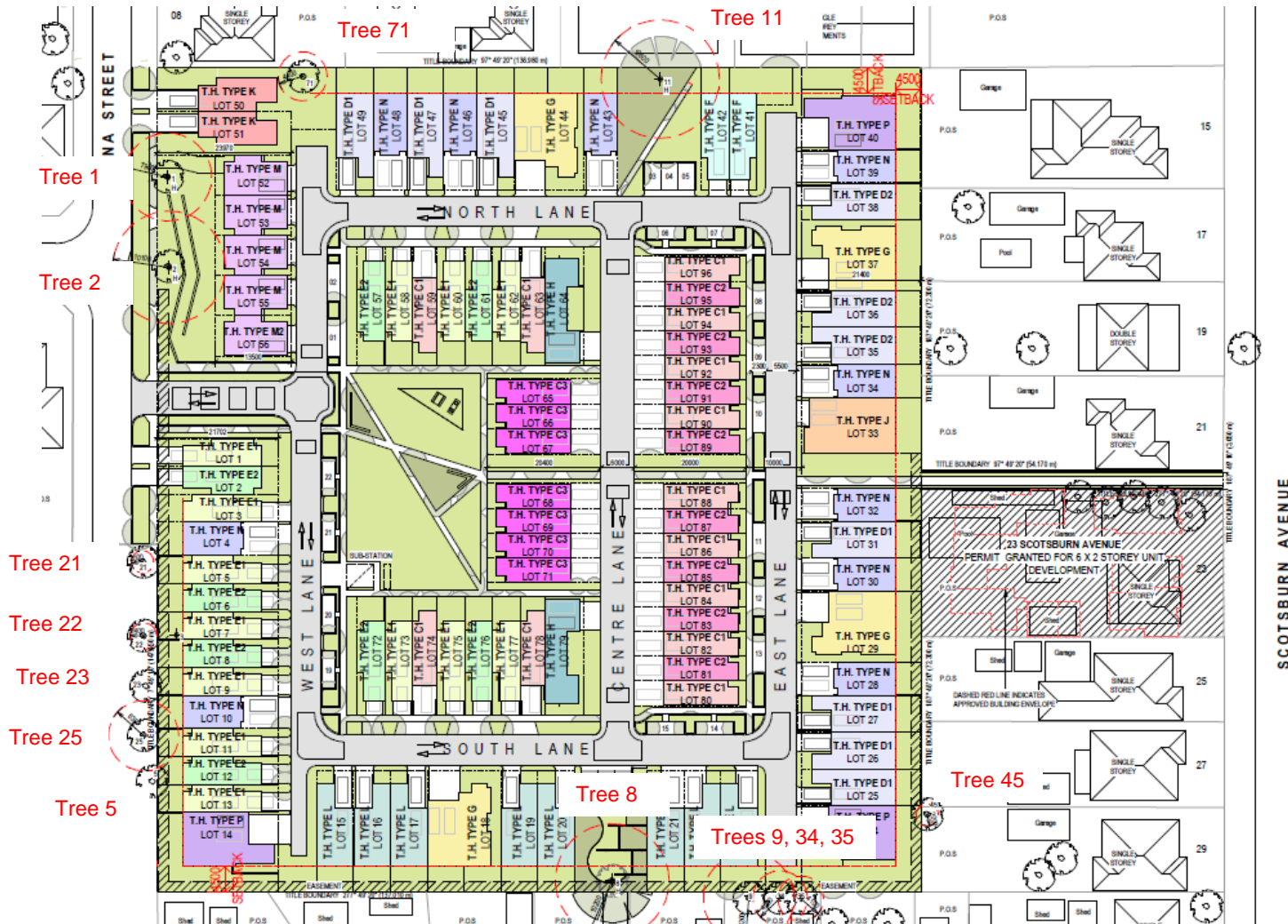
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Appendix 1: Proposed Master Plan: 10 Alvena Street, Oakleigh South.



Extract from Master Plan (TP1.10), Prepared by Rothe Lowman, Project No. 214174, dated 24/07/2017.

Appendix 2: Arboricultural Assessment Report: 10 Alvina Street,
Oakleigh South.

Prepared by Galbraith & Associates, Dated 21/07/2017.
See following 6 pages.



Tree Consultants & Contractors

Tel (03) 9888 5214

21 July 2017

Beau Cong
Acquisition & Development Manager
Spire Group
Suite 01, Level 11, 360-374 Collins Street Melbourne Vic 3000

Dear Sir,

re: 10 Alvina Street, Oakleigh South

Introduction

A residential construction project is proposed for the above site. Galbraith and Associates originally provided a report on the trees in November 2014. At the request of the Spire Group, we re-visited the site in March of this year and re-assessed the trees, updating our 2014 report.

Each tree is numbered and located on the accompanying existing site conditions survey of the site on page 3. Each tree is numbered and described in the excel spreadsheet. Subsequent to this Rothelowman Architects have further refined the plans for the site. I have been requested by Minter Ellison Lawyers to examine the plans and comment as to the impact of the proposal on the trees.

The design drawings upon which I now base my assumptions are the Masterplan, drawing No. TP1.10 P14 and the proposed site plan, TP1.11 P17, by Rothelowman Architects

Comments

Nothing has changed greatly since our 2014 assessment except for the increased sizes and hence tree protection zones of a number of the trees. The worthiness of retention values (WOR) of a few lower worth trees have gone up a point or less. A few condition ratings have been changed similarly, eg. F to F-G or vice-versa.

The Trees – General

Of the approximately 100 trees on the site, only one is possibly a remnant self-sown individual. This is the Drooping Sheoke (*Allocasuarina verticillata*) (tree 4), a small to medium old tree which is highly likely to have been well established before the Oakleigh South Primary School was constructed. It is however getting close to the

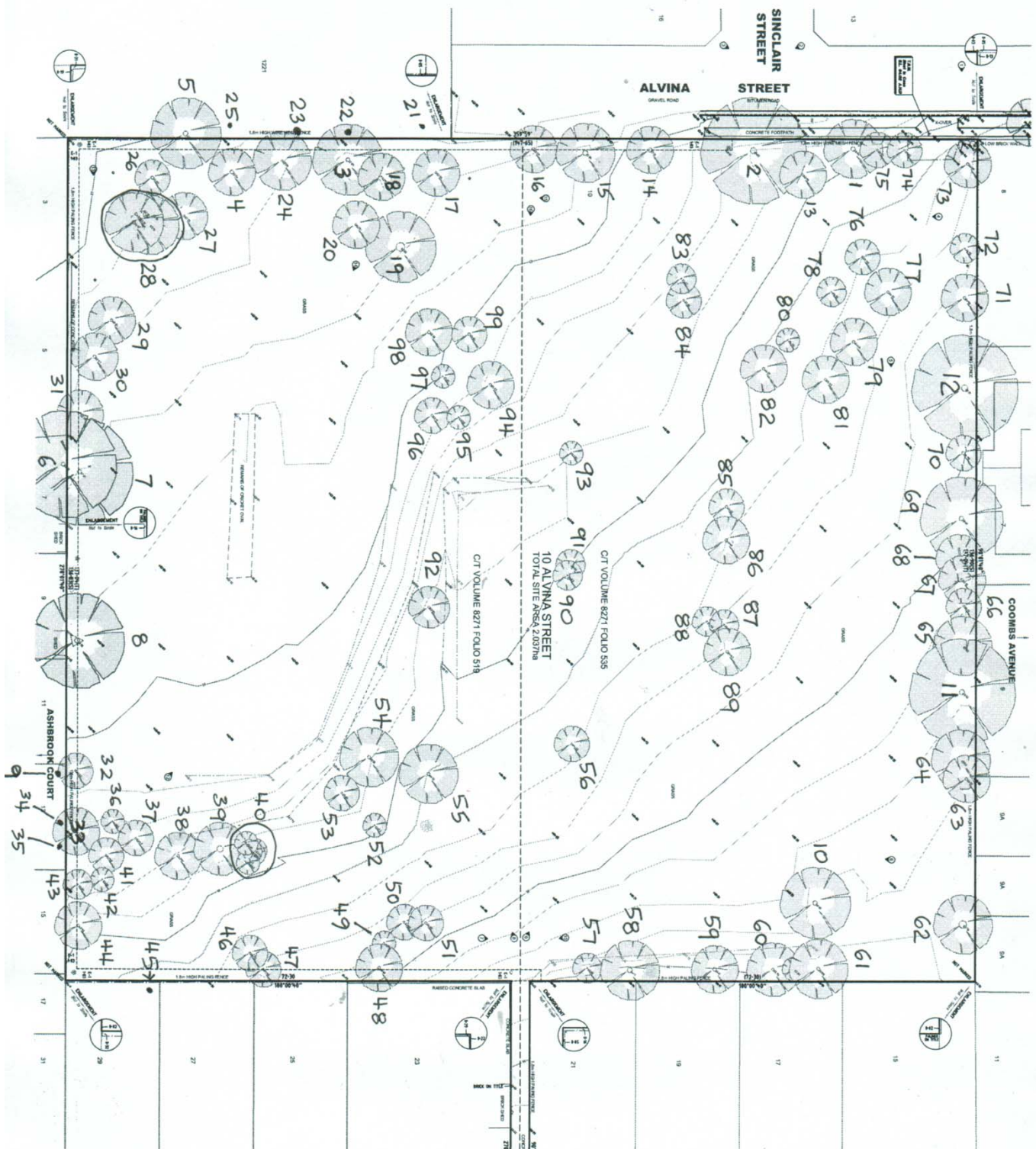
end of its safe useful life expectancy with considerable decay in its trunk. A small Coastal Tea-tree, tree 36, is present which is probably self-sown however it is difficult to say whether this species would have occurred naturally in the area prior to European occupation or if it has only invaded recently, perhaps due to lack of fire.

The age of the trees mostly varies between about 25 years and 50 years. Mature, attractive large specimens of English Oak (*Quercus robur*), Lemon-scented Gum (*Corymbia citriodora*), Brush Cherry (*Syzygium paniculatum*), Red Iron bark (*Eucalyptus sideroxylon*) and Smooth barked Apple (*Angophora costata*), all Australian natives except the oak, are present.

Other Australian natives include more than 20 trees of Queensland Brush Box (*Lophostemon confertus*), some of which have moderate retention value. Of lower significance due to their small size and/or poorer condition are, for example, Willow Peppermints (*Eucalyptus nicholii*), Bushy Sugar Gums (*Eucalyptus cladocalyx* 'Nana'), Red-flowering Gums (*Corymbia ficifolia*), a Wallangarra White Gum (*Eucalyptus scoparia*), several melaleucas and most of the nine Willow Myrtles (*Agonis flexuosa*).

Trees of Victorian origin on the site are numerically dominated by the two weed species Sweet Pittosporum (*Pittosporum undulatum*) and Sallow Wattle (*Acacia longifolia*). One individual of Red Ironbark (*Eucalyptus sideroxylon*) is healthy but will need works if retained, whilst those of Lilly Pilly (*Syzygium smithii*), Yellow Gum (*Eucalyptus leucoxydon*) and Bracelet Honey-myrtle (*Melaleuca armillaris*) are over-mature and/or structurally poor.

Apart from the afore-mentioned oak, the various non-Australian species on the site are diminutive and/or in poor health. The largest, a Weeping Willow (*Salix babylonica* or hybrid thereof) on the western boundary, is in decline, evidenced both by dieback of branches and decay in the main stems.



10 ALVINA STREET
TOTAL SITE AREA 2,037sqm

CIT VOLUME 8271 FOLIO 518

CIT VOLUME 8271 FOLIO 535

NOTES:

- The site plan has been prepared on the basis of the information provided to the Engineer by the Applicant. The Engineer has not conducted a field inspection of the site and does not warrant the accuracy or completeness of the information provided.
- The site plan is subject to the provisions of the Resource Management Act 1991 and the Resource Management Regulations 2002.
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Legend:

- Proposed Building Footprint
- Proposed Driveway
- Proposed Fencing
- Proposed Planting
- Proposed Retaining Wall
- Proposed Road
- Proposed Utility Lines
- Proposed Watercourse
- Proposed Wetland
- Proposed Windbreak
- Proposed Zone
- Proposed Other

Scale: 1:200

North Arrow: (Symbol pointing up)

Project Information:

Project Name: 10 ALVINA STREET

Client: [Name]

Engineer: [Name]

Date: [Date]

SCOTSBURN AVENUE

Impact of the Proposal

Site Trees It is proposed to retain tree numbers 1, 2, 8, 11 and 71 within the site. The first four of these trees are the highest worth for retention trees on the property. Each is large with a long safe useful life expectancy. Tree 71 is a smaller tree but still has a long safe useful life expectancy and can be expected to grow larger. Adequate space has been provided around all the trees in order to be confident of their successful long term retention. Appropriate protection procedures will have to be drawn up and put into place before, during and after the construction period. These will include protective fencing, mulching and irrigation and the prevention of any excavation works within the TPZs or between the buildings and trees. Some pruning will be required but the amount necessary to be pruned off will have no impact on the long term safe useful life expectancies.

Neighbouring Trees None of the neighbouring trees are likely to be affected, particularly if protection procedures as previously described are put into place, with the exception of tree 5. I am informed however that the owner of the land on which this dangerous old over mature eucalypt is growing has no objection to its removal. I strongly recommend this tree be removed before construction begins.

Explanations

In order to understand the column headings of the table of data, I have provided the following explanations:

DBH diameter of trunk over bark at breast height. In a number of cases where the tree has forked into multiple trunks below breast height (1.3-1.5m) the diameter is measured below the fork and an estimate is made for the single trunk equivalent at breast height, or else figures for each of the individual stems can be given.

HxS This is the estimated height (H) of the tree and its average crown spread (S).

SULE Safe useful life expectancy in years. Taken in the context that the area is to be developed for urban development, and that sensible distances are maintained between the buildings and the trees, this is the estimate of time that the tree will continue to provide useful amenity without imposing an onerous financial burden in order to maintain relative safety, and avoid excessive nuisance.

Condition This descriptor can be encapsulated by three terms, namely **Health (H), Structure (S) and Form (F)**.

Health is largely governed by the ease in which the metabolic functions are occurring throughout the tree. Symptoms of health include the amount, distribution, density, size and colour of the foliage.

Structure refers to the structural stability of the tree and its branches. A well structured tree is not likely to shed branches or stems, or snap in the trunk or blow over, whereas a poorly structured tree is more likely to.

Form basically refers to the symmetry of the tree. A tree with a straight trunk and symmetrical crown and evenly distributed branches is referred to as having good form, whilst a lopsided leaning tree may have fair – poor form.

Worthiness of Retention (WOR):

The worth for retention of a tree is based on the assumption that the site is to be re-developed, and that there is the opportunity for new tree planting. It is based on a number of factors. These factors are:

1. structure, health, form and safe useful life expectancy,
2. size, prominence in the landscape,
3. species rarity,
4. whether indigenous,
5. whether an environmental weed.
6. importance for habitat of native wildlife
7. whether of historical or cultural interest

Any tree with a WOR rating of 3 or less should be seriously considered for removal before development begins because it is dead, nearly dead or dangerous, a weed, is causing or is likely to cause a severe nuisance in the near future, or just of very little significance and readily replaceable with new plantings. Trees rated 4-6 are of some significance. Some of these trees may respond to treatments such as formative pruning, removal of dead wood, weight reduction pruning etc. Trees rated 7 or higher are of high significance (the higher the ranking the more so), primarily because of their good health, structure, form, prominence in the landscape and SULE, although they still may need substantial works done on them as already detailed, if they are to be retained.

Tree Protection Zone (TPZ) According to the Australian Standard AS 4970-2009 'Protection of Trees on Building Sites', the TPZ is the principal means of protecting trees on development sites. It is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.' The radius of the TPZ is calculated by multiplying the DBH by 12. The radius is measured from the centre of the stem at ground level. An area of 10% of the TPZ is deemed acceptable to violate if 10% of the area of the TPZ is made up in

other directions. *Thus if encroachment is from one side only, encroachment to as close as approximately 8 times the DBH (2/3 the listed TPZ radius) is permissible according to the Standard.*

The TPZs as calculated according to the AS 4970-2009 should only be construed as a rough guide. They are only used in this statement because various local authorities now demand it in their assessments of development applications. Many factors such as the type of encroachment on the TPZ, species tolerance, age, presence of spiral grain, soil type, soil depth, tree lean, the existence of onsite structures or root directional impediments, level of wind exposure, irrigation and ongoing tree care and maintenance are each highly influential on the size and success of the TPZ estimation, therefore the figures derived from the Standard and provided in this report must be treated as rough guides only.

Tree Origin Categories

Each tree has been classified as to whether it is indigenous (**I**), native to Victoria (**V**), native to Australia (**A**), exotic (**E**) or an environmental weed (**W**).

An indigenous species (**I**) is one that is known to grow naturally in the local area, even if the individual tree has been planted and is from a seed source or provenance foreign to the area.

A species classified **V** is one which has a part or all, even if very small, of its natural range within Victoria, although it may occur outside the state as well. It does not however occur naturally in the local area.

A species classified **A** is native elsewhere in Australia than Victoria. It does not occur naturally in the local area.

A species classified **E** has its natural range occurring outside Australia.

A species classified **W** is a seriously invasive environmental weed.

GALBRAITH & ASSOCIATES

Rob Galbraith
B.For.Sci.(Melb.)
N.C.H. (Arb) UK

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
	I: Indigenous						
	V: Victorian Native						
	A: Australian Native						
	E: Exotic						
	W: Weed						
1	Syzygium paniculatum (Brush Cherry)	A	41, 44, 26	13x13	G	7	Healthy medium to large tree with a long safe useful life expectancy. TPZ 7.9
2	Angophora costata (Smooth bark Apple)	A	84	17x18	G	8	Large tree in good condition. TPZ 10.1
3	Eucalyptus sideroxylon (Red Iron bark)	V	70	17x15	G	5	Good health but has a structurally poor pressure fork at 7m. TPZ 8.4
4	Allocasuarina verticillata (Coast Sheoke)	I	58	9x9	F/P	4	Over mature remnant type tree with lower trunk decay. TPZ 7.1
5	Eucalyptus pryoriana (Gippsland Manna Gum)	I	63, 48	19x15	P		Over mature neighbouring tree which leans north-east into the subject site. It poses a threat of shedding large limbs or even collapsing onto the subject site. TPZ 9.5
6	Gone						Neighbouring tree which has been removed
7	Angophora costata	A	66	13x16	F/P	4	Mature tree leaning heavily north - branch shedder. TPZ 7.9
8	Angophora costata	A	85	19x19	G	8	Mature tree in good condition. TPZ 10.2 Any buildings would have to be set back 11m from the fence opposite the tree
9	Fraxinus angustifolia (Desert Ash)	EW	52, 36, 26,	12x16	G		Healthy neighbouring weed tree centred a metre from the fence. TPZ 8.2
10	Corymbia citriodora (Lemon Scented Gum)	A	73	19x18	G	6	Large tree in good condition, but the species when mature tends to develop limb shed tendencies, hence its worth for retention is somewhat compromised. TPZ 8.8
11	Quercus robur (English Oak)	E	88	15x20	G	8	Large deciduous tree in good condition. TPZ 10.6
12	Angophora costata	A	91	19x18	F	4	Large good specimen but its WOR is average due to the potential liability its continuous existence poses to the dwelling to the north only 5m from the trunk. Major boughs have recently been cut off on the north side so the tree is now heavily lopsided to the south. TPZ 10.9
13	Eucalyptus leucoxylon (Yellow Gum)	V	47 equiv	10x11	F	4	Patchy crown, deadwood.
14	Salix babylonica (Weeping Willow)	E	46,43 equiv approx	11x11	F/P	3	In decline.
15	Agonis flexuosa (Willow Myrtle)	A	30,23,20,19, 13,22,16	7x11	F/P	3	Coppice stems from decayed base.
16	Agonis flexuosa (Willow Myrtle)	A	32,22	7x10	P	2	Decayed.
17	Lophostemon confertus (Queensland Brush Box)	A	28, 22	8x8	F	5	Basically OK, crown density is modest. TPZ 4.3.
18	Lophostemon confertus (Queensland Brush Box)	A	25	9x6	F/P	4	Partly suppressed. TPZ 3
19	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	50,50,50,40, 40 approx	8x14	P	3	Over-mature, decay.
20	Lophostemon confertus (Queensland Brush Box)	A	40 equiv	9x9	F/G	5	Mildly lopsided to east but generally OK. TPZ 4.8.
21	Eucalyptus viminalis (Manna Gum)	I	10,10	4x6	F		Not on plan. In adjacent property approx 4m from northern boundary and 2m west of fence. Young tree - may be E. pryoriana. TPZ 2
22	Eucalyptus viminalis (Manna Gum)	I	20	5x4	F		Not on plan. In adjacent property, centred 2.2m from fence. TPZ 2.4.
23	Eucalyptus pryoriana (Coast Manna Gum)	I	55 approx	11x7	Dead		Not on plan. In adjacent property approx 7m south of 22 and 0.8m from fence. Likely ID (tree is dead). A few dead branches overhang subject site. A tree of Acacia longifolia (a weed species) is located 3m to the south.
24	Corymbia citriodora (Lemon-Scented Gum)	A	38	15x11	F	5	Structure, health and form all are fair. TPZ 4.6.

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
25	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	30,17,20,23, 25 approx	5x8	F/P		Not on plan, located in adjacent property approx west of tree 4 and 1.6m from fence. Over-mature. TPZ 6.3.
26	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	34	14x6	P	2	
27	Lophostemon confertus (Queensland Brush Box)	A	28,22	10x9	P	4	Bifurcated at base. TPZ 4.3
28	Eucalyptus nicholii (x6) (Willow Peppermint)	A	Mostly 37 to 52 (two trees are smaller)	Dom ht 16m	F/P	3 to 4	Close group. Structure fair to poor. Failures.
29	Pittosporum undulatum (Sweet Pittosporum)	VW	28,27	8x10	F	3	
30	Lophostemon confertus (Queensland Brush Box)	A	47 equiv	9x11	F	5	TPZ 5.6.
31	Syzygium smithii (Lilly Pilly)	V	28,26,25,16, 15	9x8	F	5	Healthy but structure fair only. TPZ 6.1.
32	Pittosporum undulatum (Sweet Pittosporum)	VW	25	6x8	F	3	
33	Pittosporum undulatum (Sweet Pittosporum)	VW	22,18,13	9x9	F	3	
34	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	25,25,20 approx	11x8	F		Not on plan. In adjacent property approx 2.5m SW of 33 and centred 1m from fence. TPZ 4.9.
35	Cupressus sempervirens (Italian Cypress)	E	34 approx	8x2.5	G		As above but approx 2.5m SE of 33. TPZ 4.1.
36	Leptospermum laevigatum (Coast Tea-tree)	I	14 equiv	3x4	F	3	
37	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	28	9x8	F/G	3	
38	Lophostemon confertus (Queensland Brush Box)	A	33	10x8	F/G	5	Developing a tight crotch at 2m but generally good. Good form. TPZ 4.0.
39	Agonis flexuosa (Willow Myrtle)	A	85 approx	9x11	P	2	
40	Acacia longifolia (x6) (Sallow Wattle)	VW	10 to 24 equiv	dom ht 5m	F	2	Close, shrubby group.
41	Corymbia ficifolia (Red-flowering Gum)	A	36	8x9	F	5	Branch failure. TPZ 4.3
42	Prunus domestica (Plum)	E	25 equiv	4x6	F	3	
43	Lophostemon confertus (Queensland Brush Box)	A	19	7x6	F/P	3	Patchy crown.
44	Lophostemon confertus (Queensland Brush Box)	A	30,21	8x8	F/P	3	Borers in stem to north.
45	Prunus persica (Peach)	E	14 approx	4x4	F/G		Not on plan, in NW corner of 29 Scotsburn Ave. Approx 0.9m from fence. TPZ 2.0.
46	Lophostemon confertus (Queensland Brush Box)	A	30	7x8	F	5	Modest crown density. TPZ 3.6.
47	Pittosporum undulatum (Sweet Pittosporum)	VW	33 equiv	7x8	F	3	
48	Corymbia ficifolia (Red-flowering Gum)	A	28,23,22,24	9x11	F	5	Bifurcation developing between main stems. TPZ 5.8
49	Chamaecytisus palmensis (Tree Lucerne)	E	15 equiv	7x8	F	3	
50	Lophostemon confertus (Queensland Brush Box)	A	25,16,16,15	9x10	P	3	One stem has split away from base of tree.

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
51	Lophostemon confertus (Queensland Brush Box)	A	31,22,16	8x9	F	4	Fair in all regards. Lopsided to west TPZ 3.3
52	Melaleuca linariifolia (Snow in Summer)	A	22 equiv	4x3	F/P	3	Stump regrowth.
53	Lophostemon confertus (Queensland Brush Box)	A	25	6x6	F	4	
54	Eucalyptus sideroxylon (Red Ironbark)	V	65	13x13	F	5	Healthy but prone to further branch failures. TPZ 7.8
55	Casuarina cunninghamiana (River She-Oak)	A	55	13x12	F	5	Needs weight reduction pruning if retained. TPZ 6.6.
56	Photinia "Robusta" (Photinia)	E	25,20	6x6	P	2	In decline.
57	Agonis flexuosa (Willow Myrtle)	A	20 equiv	7x5	F/P	3	
58	Agonis flexuosa (Willow Myrtle)	A	68 equiv approx	13x12	P	2	Has fungal decay brackets (Phellinus) in one of its main stems.
59	Agonis flexuosa (Willow Myrtle)	A	50 equiv approx	5x10	F	4	Low-spreading crown.
60	Lophostemon confertus (Queensland Brush Box)	A	38	11x9	G	5 to 6	Attractive smaller tree, long useful life. TPZ 4.6
61	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	43,39	9x12	P	2	Has split apart.
62	Agonis flexuosa (Willow Myrtle)	A	52,44,34	11x10	F/P	4	Substantial die-back with one dead co-dominant stem. TPZ 9.1.
63	Allocasuarina torulosa (Forest She-Oak)	A	50	13x13	F	4	Lopsided toward neighbouring house 5m away. TPZ 6.
64	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	56 equiv approx	10x10	F/P	3	In decline.
65	Eucalyptus nicholii (Willow Peppermint)	A	67	13x10	F/P	4	TPZ 8. Die-back on the north side.
66	Agonis flexuosa (Willow Myrtle)	A	17,16,10	7x6	F/P	3	Stump regrowth.
67	Lophostemon confertus (Queensland Brush Box)	A	38	9x9	F/G	5	Sound, long useful life. TPZ 4.6.
68	Agonis flexuosa (Willow Myrtle)	A	36,29 equiv	7x7	F	4	TPZ 5.5.
69	Eucalyptus scoparia (Wallangarra White Gum)	A	51,42 equiv	12x11	F/P	2	Substantial die-back.
70	Corymbia ficifolia (Red-flowering Gum)	A	31,28,26	5x7	F/P	3	Dieback, V crotches.
71	Lophostemon confertus (Queensland Brush Box)	A	37 equiv	9x11	F/G	5	Leafy to ground level; lopsided and some lean to south. TPZ 4.4.
72	Eucalyptus leucoxylon	V	22	6x5	P	2	
73	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	42 equiv	9x10	F	3	Pruned back to fence on north side.
74	Syzygium smithii (Lilly Pilly)	V	23,17,16,14,14	8x6	F/P	3	Stump regrowth stems.
75	Lophostemon confertus (Queensland Brush Box)	A	24,17	9x6	F	4	Partly suppressed. TPZ 3.5
76	Lophostemon confertus (Queensland Brush Box)	A	28 equiv	6x6	F/P	3	
77	Lophostemon confertus (Queensland Brush Box)	A	34,29 equiv	9x10	F/G	5	Bifurcated. Fair-good health. TPZ 5.4
78	Lophostemon confertus (Queensland Brush Box)	A	25, 19	8x9	F/G	5	TPZ 3.8
79	Lophostemon confertus (Queensland Brush Box)	A	25, 18	8x8	F/G	5	TPZ 3.7.
80	Pittosporum undulatum (Sweet Pittosporum)	VW	21 equiv	5x5	P	1	Dead

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
81	Lophostemon confertus (Queensland Brush Box)	A	41	10x10	F	5	Fair structure - V crotches at 2.5m. TPZ 4.9
82	Lophostemon confertus (Queensland Brush Box)	A	42	10x10	F	5	V crotch at 2m. TPZs 5
83,84	Hakea salicifolia (x2) (Willow-leaf Hakea)	A	35 each approx	dom ht 5m	P	2	Over-mature, in decline.
85	Melaleuca linariifolia (Snow in Summer)	A	36 equiv approx	6x6	P	2	
86	Corymbia ficifolia (Red-flowering Gum)	A	49 equiv	8x9	F	5	TPZ 5.9
87	Acacia saligna (Golden Wreath Wattle)	AW	13,12 equiv	5x4	P	2	
88	Acacia saligna (Golden Wreath Wattle)	AW	15,9	4x5	F	3	
89	Acer negundo (Box Elder)	E	35 equiv	8x8	P	2	Much of the crown is dead.
90	Acacia longifolia (Sallow Wattle)	VW	22 equiv	4x6	P	2	Splitting.
91	Pittosporum undulatum (Sweet Pittosporum)	VW	14,13	7x4	P	2	
92	Lophostemon confertus (Queensland Brush Box)	A	41	8x8	F/G	5	TPZ 4.9.
93	Metrosideros excelsa (NZ Christmas Tree)	E	25,23	6x3	P	2	Much of crown is dead.
94	Pittosporum undulatum (Sweet Pittosporum)	VW	37 equiv	8x11	F	3	
95	Prunus cerasifera "Nigra" (Purple-leaved Cherry-plum)	E	10 equiv	4x3	F	3	
96	Leptospermum petersonii (Lemon-scented Tea-tree)	A	27,21,16 equiv	5x8	P	2	In decline, splitting.
97	Callistemon rugulosus (Scarlet Bottlebrush)	V	16 equiv	4x4	F	3	Shrub species.
98	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	36,29	10x11	P	2	Heavy-limbed, cankers.
99	Melaleuca styphelioides (Prickly Paperbark)	A	33 equiv	7x6	F/P	3	V crotches, lacking foliage in parts due to closeness of adjacent trees.

Appendix 3: Arboricultural Assessment Report: 10 Alvina Street,
Oakleigh South.

Prepared by Galbraith & Associates, Dated 21/11/2014.
See following 9 pages.



Tree Consultants & Contractors
40 Glyndon Road, Camberwell 3124
Tel (03) 9888 5214
Fax (03) 9888 5063

21 Nov 2014

Darren Horisk
Assistant Project Manager
Point Polaris
L27 Rialto Tower South
525 Collins Street
Melbourne VIC 3000

Dear Sir,

re: 10 Alvina Street, Oakleigh South

Introduction

I am informed a multi residential development is proposed for 10 Alvina Street, Oakleigh South. Galbraith and Associates has been requested by Point Polaris to report on the trees which are on or close to the site, including street trees. Each of these trees is described in terms of species type, origin, size, condition and worth for retention for the site trees. Tree protection zones according to the Australian Standard approach are provided for the higher worth site trees plus any neighbouring trees in close proximity.

Each tree is located and numbered on the accompanying copy of the existing site conditions survey on page 3 of this report and described in the accompanying excel spreadsheet of data.

The Trees – General

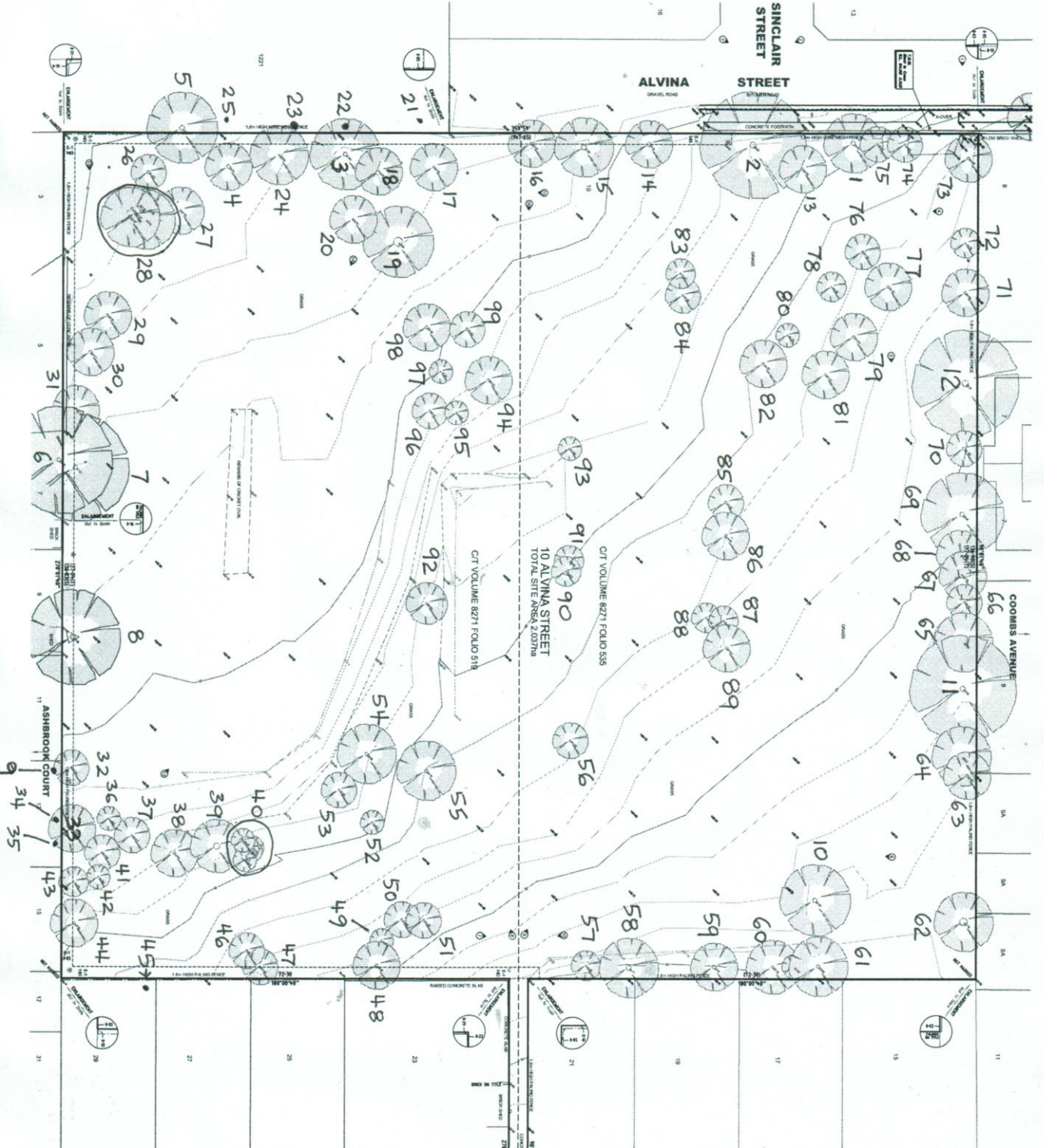
Of the approximately 100 trees on the site, only one is possibly a remnant self-sown individual. This is the Drooping Sheoke (*Allocasuarina verticellata*) (tree 4), a small to medium old tree which is highly likely to have been well established before the Oakleigh South Primary School was constructed. It is however getting close to the end of its safe useful life expectancy with considerable decay in its trunk.

The age of the trees mostly varies between about 25 years and 50 years. Mature, attractive large specimens of English Oak (*Quercus robur*), Lemon-scented Gum (*Corymbia citriodora*), Brush Cherry (*Syzygium paniculatum*), Red Iron bark (*Eucalyptus sideroxylon*) and Smooth barked Apple (*Angophora costata*), all Australian natives except the oak, are present.

Other Australian natives include more than 20 trees of Queensland Brush Box (*Lophostemon confertus*), some of which have moderate retention value. Of lower significance due to their small size and/or poorer condition are, for example, Willow Peppermints (*Eucalyptus nicholii*), Bushy Sugar Gums (*Eucalyptus cladocalyx* 'Nana'), Red-flowering Gums (*Corymbia ficifolia*), a Wallangarra White Gum (*Eucalyptus scoparia*), several melaleucas and most of the nine Willow Myrtles (*Agonis flexuosa*).

Trees of Victorian origin on the site are numerically dominated by the two weed species Sweet Pittosporum (*Pittosporum undulatum*) and Sallow Wattle (*Acacia longifolia*). One individual of Red Ironbark (*Eucalyptus sideroxylon*) is healthy but will need works if retained, whilst those of Lilly Pilly (*Syzygium smithii*), Yellow Gum (*Eucalyptus leucoxylon*) and Bracelet Honey-myrtle (*Melaleuca armillaris*) are over-mature and/or structurally poor.

Apart from the afore-mentioned oak, the various non-Australian species on the site are diminutive and/or in poor health. The largest, a Weeping Willow (*Salix babylonica* or hybrid thereof) on the western boundary, is in decline, evidenced both by dieback of branches and decay in the main stems.



Legend

1. Trees to be removed and replaced by the same or similar trees of the same or greater diameter.

2. Trees to be removed and replaced by different trees of the same or greater diameter.

3. Trees to be removed and not replaced.

4. Trees to be retained.

5. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the owner.

6. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the council.

7. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the council, subject to the approval of the council.

8. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the council, subject to the approval of the council, and the approval of the council.

9. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the council, subject to the approval of the council, and the approval of the council.

10. Trees to be removed and replaced by different trees of the same or greater diameter, to be planted by the council, subject to the approval of the council, and the approval of the council.

SCOTSBURN AVENUE

Notes on Terminology

In order to understand the column headings of the table of data, I have provided the following explanations:

DBH diameter of trunk over bark at breast height In a number of cases where the tree has forked into multiple trunks below breast height (1.3-1.5m) the diameter is measured below the fork and an estimate is made for the single trunk equivalent at breast height, or else figures for each of the individual stems can be given.

HxS This is the estimated height (H) of the tree and its average crown spread (S).

SULE Safe useful life expectancy in years. Taken in the context that the area is to be developed for residential use, and that sensible distances are maintained between the buildings and the trees, this is the estimate of time that the tree will continue to provide useful amenity without imposing an onerous financial burden in order to maintain relative safety, and avoid excessive nuisance.

Condition This descriptor can be encapsulated by three terms, namely **Health (H), Structure (S) and Form (F)**.

Health is largely governed by the ease in which the metabolic functions are occurring throughout the tree. Symptoms of health include the amount, distribution, density, size and colour of the foliage.

Structure refers to the structural stability of the tree and its branches. A well structured tree is not likely to shed branches or stems, or snap in the trunk or blow over, whereas a poorly structured tree is more likely to.

Form basically refers to the symmetry of the tree. A tree with a straight trunk and symmetrical crown and evenly distributed branches is referred to as having good form, whilst a lopsided leaning tree may have fair – poor form.

Worthiness of Retention (WOR):

The worth for retention of a tree is based on the assumption that the site is to be re-developed, and that there is the opportunity for new tree planting. It is based on a number of factors. These factors are:

1. structure, health, form and safe useful life expectancy,
2. size, prominence in the landscape,
3. species rarity,
4. whether indigenous,
5. whether an environmental weed.
6. importance for habitat of native wildlife
7. whether of historical or cultural interest

Any tree with a WOR rating of 3 or less should be seriously considered for removal before development begins because it is dead, nearly dead or dangerous, a weed, is causing or is likely to cause a severe nuisance in the near future, or just of very little significance and readily replaceable with new plantings. Trees rated 4-6 are of some significance. Some of these trees may respond to treatments such as formative pruning, removal of dead wood, weight reduction pruning etc. Trees rated 7 or higher are of high significance (the higher the ranking the more so), primarily because of their good health, structure, form, prominence in the landscape and SULE, although all they still may need substantial works done on them as already detailed, if they are to be retained.

Tree Protection Zone (TPZ) According to the Australian Standard AS 4970-2009 'Protection of Trees on Building Sites', the TPZ is the principal means of protecting trees on development sites. It is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.' The radius of the TPZ is calculated by multiplying the DBH by 12. The radius is measured from the centre of the stem at ground level. An area of 10% of the TPZ is deemed acceptable to violate if 10% of the area of the TPZ is made up in other directions. *Thus if encroachment is from one side only, encroachment to as close as approximately 8 times the DBH (2/3 the listed TPZ radius) is permissible according to the Standard.*

The AS 4970-2009 should only be construed as a rough guide. It is only used in this statement because various local authorities now demand it in their assessments of development applications. Many factors such as the type of encroachment on the TPZ, species tolerance, age, presence of spiral grain, soil type, soil depth, tree lean, the existence of onsite structures or root directional impediments, level of wind exposure, irrigation and ongoing tree care and maintenance are each highly influential on the size and success of the TPZ estimation, therefore the figures derived from the Standard and provided in this report must be treated as rough guides only.

Tree Origin Categories

Each tree has been classified as to whether it is indigenous (**I**), native to Victoria (**V**), native to Australia (**A**), exotic (**E**) or an environmental weed (**W**).

An indigenous species (**I**) is one that is known to grow naturally in the local area, even if the individual tree has been planted and is from a seed source or provenance foreign to the area.

A species classified **V** is one which has a part or all, even if very small, of its natural range within Victoria, although it may occur outside the state as well. It does not however occur naturally in the local area.

A species classified **A** is native elsewhere in Australia than Victoria. It does not occur naturally in the local area.

A species classified **E** has its natural range occurring outside Australia.

A species classified **W** is a seriously invasive environmental weed.

GALBRAITH & ASSOCIATES

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Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
	I: Indigenous						
	V: Victorian Native						
	A: Australian Native						
	E: Exotic						
	W: Weed						
1	Syzygium paniculatum (Brush Cherry)	A	39, 40, 26	10x10	G	7	Healthy medium to large tree with a long safe useful life expectancy. TPZ 7.4
2	Angophora costata (Smooth bark Apple)	A	83	16x18	G	8	Large tree in good condition. TPZ 10.
3	Eucalyptus sideroxylon (Red Iron bark)	V	67	15x13	G	6	Good health but has a structurally poor pressure fork developing at 7m. TPZ 8
4	Allocasuarina verticellata (Coast Sheoke)	I	55	9x9	F/P	4	Over mature remnant type tree with lower trunk decay. TPZ 6.6
5	Eucalyptus pryoriana (Gippsland Manna Gum)	I	65	17x13	F/P		Over mature neighbouring tree which leans north-east into the subject site. It poses a threat of shedding large limbs or even collapsing onto the subject site. TPZ 7.8
6	Eucalyptus saligna (Sydney Blue Gum)	A	65	20x15	G		Neighbouring tree in good health. TPZ 7.8
7	Angophora costata	A	63	13x16		5	Mature tree leaning north - branch shedder. TPZ 7.6
8	Angophora costata	A	83	16x19	G	8	Mature tree in good condition. TPZ 10
9	Fraxinus angustifolia (Desert Ash)	EW	47, 35, 26, 23	12x16	G		Healthy neighbouring weed tree. TPZ 8.2
10	Corymbia citridora (Lemon Scented Gum)	A	72	18x18	G	6	Large tree in good condition, but the species when mature tends to develop limb shed tendencies, hence its worth for retention is somewhat compromised. TPZ 8.6
11	Quercus robur (English Oak)	E	83	18x18	G	8	Large deciduous tree in good condition. TPZ 10
12	Angophora costata	A	89	21x18	G	5	Large good specimen but its WOR is average due to the potential liability its continuous existence poses to the dwelling to the north only 5m from the trunk. TPZ 10.7
13	Eucalyptus leucoxylon (Yellow Gum)	V	47 equiv	10x11	F	4	Patchy crown, deadwood.
14	Salix babylonica (Weeping Willow)	E	46,43 equiv approx	11x11	F/P	3	In decline.
15	Agonis flexuosa (Willow Myrtle)	A	30,23,20,19, 13,22,16	7x11	F/P	3	Coppice stems from decayed base.
16	Agonis flexuosa (Willow Myrtle)	A	32,22	7x10	P	2	Decayed.
17	Lophostemon confertus (Queensland Brush Box)	A	34	8x6	F/P	5	Basically OK, crown density is modest. TPZ 4.1.
18	Lophostemon confertus (Queensland Brush Box)	A	23	9x6	F/P	4	Partly suppressed.
19	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	50,50,50,40, 40 approx	8x14	P	3	Over-mature, decay.
20	Lophostemon confertus (Queensland Brush Box)	A	37 equiv	9x9	F/G	5	Mildly lopsided to east but generally OK. TPZ 4.4.
21	Eucalyptus viminalis (Manna Gum)	I	5,10	4x6	F		Not on plan. In adjacent property approx 4m from northern boundary and 2m west of fence. Young tree - may be E. Pryoriana.
22	Eucalyptus viminalis (Manna Gum)	I	10,9	4x4	F		Not on plan. In adjacent property, located approx west of tree 3 and 0.3m from fence. Re ID: see comments for tree 21. TPZ 2.0.
23	Eucalyptus pryoriana (Coast Manna Gum)	I	55 approx	11x7	Dead		Not on plan. In adjacent property approx 7m south of 22 and 0.8m from fence. Likely ID (tree is dead). A few dead branches overhang subject site. A tree of Acacia longifolia (a weed species) is located 3m to the south.
24	Corymbia citridora (Lemon-Scented Gum)	A	32	13x11	F	5	Structure, health and form all are fair. TPZ 3.8.
25	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	30,17,20,23, 25 approx	5x8	F/P		Not on plan, located in adjacent property approx west of tree 4 and 1.6m from fence. Over-mature. TPZ 6.3.
26	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	34	14x6	P	2	

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
27	Lophostemon confertus (Queensland Brush Box)	A	27,21	10x9	P	3	Bifurcated at base.
28	Eucalyptus nicholii (x6) (Willow Peppermint)	A	Mostly 37 to 52 (two trees are smaller)	Dom ht 16m	F/P	3 to 4	Close group. Structure fair to poor. Failures.
29	Pittosporum undulatum (Sweet Pittosporum)	VW	28,27	8x10	F	3	
30	Lophostemon confertus (Queensland Brush Box)	A	41 equiv	9x9	F	5	TPZ 4.9.
31	Syzygium smithii (Lilly Pilly)	V	27,26,23,16,15	9x8	F	5	Healthy but structure fair only. TPZ 5.9.
32	Pittosporum undulatum (Sweet Pittosporum)	VW	25	6x8	F	3	
33	Pittosporum undulatum (Sweet Pittosporum)	VW	22,18,13	9x9	F	3	
34	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	25,25,20 approx	11x8	F		Not on plan. In adjacent property approx 2.5m SW of 33 and 0.3m from fence. TPZ 4.9.
35	Cupressus sempervirens (Italian Cypress)	E	32 approx	8x2.5	G		As above but approx 2.5m SE of 33. TPX 3.8.
36	Leptospermum laevigatum (Coast Tea-tree)	I	14 equiv	3x4	F	3	
37	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	28	9x8	F/G	3	
38	Lophostemon confertus (Queensland Brush Box)	A	33	10x8	F/G	5	Developing a tight crotch at 2m but generally good. Good form. TPZ 4.0.
39	Agonis flexuosa (Willow Myrtle)	A	85 approx	9x11	P	2	
40	Acacia longifolia (x6) (Sallow Wattle)	VW	10 to 24 equiv	dom ht 5m	F	2	Close, shrubby group.
41	Corymbia ficifolia (Red-flowering Gum)	A	32	7x9	F	4	Branch failure.
42	Prunus domestica (Plum)	E	25 equiv	4x6	F	3	
43	Lophostemon confertus (Queensland Brush Box)	A	19	7x6	F/P	3	Patchy crown.
44	Lophostemon confertus (Queensland Brush Box)	A	30,21	8x8	F/P	3	Borers in stem to north.
45	Prunus persica (Peach)	E	14 approx	4x4	F/G		Not on plan, in NW corner of 29 Scotsburn Ave. Approx 0.9m from fence. TPZ 2.0.
46	Lophostemon confertus (Queensland Brush Box)	A	30	7x8	F	5	Modest crown density. TPZ 3.6.
47	Pittosporum undulatum (Sweet Pittosporum)	VW	33 equiv	7x8	F	3	
48	Corymbia ficifolia (Red-flowering Gum)	A	27,23,22,21	9x11	F/P	4	Bifurcation developing between main stems.
49	Chamaecytisus palmensis (Tree Lucern)	E	15 equiv	7x8	F	3	
50	Lophostemon confertus (Queensland Brush Box)	A	25,16,16,15	9x10	P	2	One stem has split away from base of tree.
51	Lophostemon confertus (Queensland Brush Box)	A	31,20,15	8x9	F	4	Fair in all regards.
52	Melaleuca linariifolia (Snow in Summer)	A	22 equiv	4x3	F/P	3	Stump regrowth.
53	Lophostemon confertus (Queensland Brush Box)	A	25	6x6	F	4	
54	Eucalyptus sideroxylon (Red Ironbark)	V	60	12x11	F	5	Healthy but prone to further branch failures. TPZ 7.2

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
55	Casuarina cunninghamiana (River She-Oak)	A	49	13x12	F	4	Of limited useful life - likely to decline markedly when extended dry weather occurs.
56	Photinia "Robusta" (Photinia)	E	25,20	6x6	P	2	In decline.
57	Agonis flexuosa (Willow Myrtle)	A	20 equiv	7x5	F/P	3	
58	Agonis flexuosa (Willow Myrtle)	A	68 equiv approx	13x12	P	2	Has fungal decay brackets (Phellinus) in one of its main stems.
59	Agonis flexuosa (Willow Myrtle)	A	50 equiv approx	5x10	F	4	Low-spreading crown.
60	Lophostemon confertus (Queensland Brush Box)	A	36	11x9	G	5 to 6	Attractive smaller tree, long useful life. TPZ 4.3.
61	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	43,39	9x12	P	2	Has split apart.
62	Agonis flexuosa (Willow Myrtle)	A	49,44,34	11x10	F/G	5	Generally sound and healthy. TPZ 8.9.
63	Allocasuarina torulosa (Forest She-Oak)	A	45	11x8	F/P	3	Lopsided, over-mature.
64	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	48 equiv approx	10x10	F/P	2	In decline.
65	Eucalyptus nicholii (Willow Peppermint)	A	61	13x10	F	5	TPZ 7.3.
66	Agonis flexuosa (Willow Myrtle)	A	17,16,10	7x6	F/P	3	Stump regrowth.
67	Lophostemon confertus (Queensland Brush Box)	A	38	9x9	F/G	5	Sound, long useful life. TPZ 4.6.
68	Agonis flexuosa (Willow Myrtle)	A	36,28 equiv	7x7	F	5	TPZ 5.5.
69	Eucalyptus scoparia (Wallangarra White Gum)	A	51,42 equiv	12x11	F/P	4	Assorted degrees of dieback, although some refoliation.
70	Corymbia ficifolia (Red-flowering Gum)	A	31,28,26	5x7	F/P	3	Dieback, V crotches.
71	Lophostemon confertus (Queensland Brush Box)	A	33 equiv	9x9	F/G	5	Leafy to ground level; lopsided and some lean to south. TPZ 4.0.
72	Eucalyptus leucoxyton	V	22	6x5	P	2	
73	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	42 equiv	9x10	F	3	Pruned back to fence on north side.
74	Syzygium smithii (Lilly Pilly)	V	23,17,16,14,14	8x6	F/P	3	Stump regrowth stems.
75	Lophostemon confertus (Queensland Brush Box)	A	23,16	9x6	F/P	3	Partly suppressed.
76	Lophostemon confertus (Queensland Brush Box)	A	28 equiv	6x6	F	4	
77	Lophostemon confertus (Queensland Brush Box)	A	34,29 equiv	9x10	F/P	3	Bifurcated. Fair health.
78	Lophostemon confertus (Queensland Brush Box)	A	25 equiv	7x6	F	4	
79	Lophostemon confertus (Queensland Brush Box)	A	31 equiv	8x8	F/G	5	TPZ 3.7.
80	Pittosporum undulatum (Sweet Pittosporum)	VW	21 equiv	5x5	P	2	
81	Lophostemon confertus (Queensland Brush Box)	A	41	9x9	F	4	Fair structure - V crotches at 2.5m.
82	Lophostemon confertus (Queensland Brush Box)	A	39 equiv	9x9	F	4	V crotch at 2m.
83,84	Hakea salicifolia (x2) (Willow-leaf Hakea)	A	35 each approx	dom ht 5m	P	2	Over-mature, in decline.

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
85	Melaleuca linariifolia (Snow in Summer)	A	36 equiv approx	6x6	P	2	
86	Corymbia ficifolia (Red-flowering Gum)	A	49 equiv	8x9	F/P	3	Numerous V crotches.
87	Acacia saligna (Golden Wreath Wattle)	AW	13,12 equiv	5x4	P	2	
88	Acacia saligna (Golden Wreath Wattle)	AW	15,9	4x5	F	3	
89	Acer negundo (Box Elder)	E	35 equiv	8x8	P	2	Much of the crown is dead.
90	Acacia longifolia (Sallow Wattle)	VW	22 equiv	4x6	P	2	Splitting.
91	Pittosporum undulatum (Sweet Pittosporum)	VW	14,13	7x4	P	2	
92	Lophostemon confertus (Queensland Brush Box)	A	39 equiv	8x7	F	4	Health fair and some branch attachments fair only.
93	Metrosideros excelsa (NZ Christmas Tree)	E	25,23	6x3	P	2	Much of crown is dead.
94	Pittosporum undulatum (Sweet Pittosporum)	VW	37 equiv	8x11	F	3	
95	Prunus cerasifera "Nigra" (Purple-leaved Cherry-plum)	E	10 equiv	4x3	F	3	
96	Leptospermum petersonii (Lemon-scented Tea-tree)	A	27,21,16 equiv	5x8	P	2	In decline, splitting.
97	Callistemon rugulosus (Scarlet Bottlebrush)	V	16 equiv	4x4	F	3	Shrub species.
98	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	36,29	10x11	P	2	Heavy-limbed, cankers.
99	Melaleuca styphelioides (Prickly Paperbark)	A	33 equiv	7x6	F/P	3	V crotches, lacking foliage in parts due to closeness of adjacent trees.