Expert Witness Statement of:

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3 March 2022

Amendment C119 to the Banyule Planning Scheme

Date of Inspections: 21 February 2022

Client: Banyule City Council

Instructing Planner: Nicola Rooks – Strategic Planner

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1. SUMMARY OF FINDINGS

1.1. Amendment C119 primarily seeks to apply the ESO4 schedule to 95 additional trees. All trees presented in this Amendment have been confirmed as significant in accordance with Significance Criteria established by Amendment C5 (2001) to Schedule 4 to the *Environmental Significance Overlay* (ESO4) in the Banyule Planning Scheme.

1.2. These Significance Criteria – tailored to the specific Banyule context – remain highly appropriate for nominating, assessing, and recommending additions to its ESO4 Schedule.

1.3. As is proposed in several submissions, the implications of substituting the Critical Root Zone formula with the TPZ area calculation as defined in AS4970-2009 *Protection of Trees on Development Sites* to determine ESO4 permit triggers have been investigated. These investigations find that using the AS4970 TPZ formula would fail to adequately capture considerations of Tree Significance – considerations that are presently and successfully accommodated by the existing Critical Root Zone formula – and would thereby compromise the Schedule's capacity to achieve its objective to protect and enhance significant trees and areas of vegetation.

1.4. The ESO4 objectives and permit triggers appropriately and effectively assess and enable development – including the capacity for buildings and works within a Critical Root Zone – whilst also successfully protecting and enhancing significant trees.

1.5. Objections raised directly in regards to the inclusion of Trees 423, 696, and 721 in the Amendment have been investigated and their inclusion in the Amendment is found to be justified as proposed. No arboricultural grounds exist that would support the deletion of any of these three trees proposed for inclusion in the amendment.

1.6. Accordingly, no recommendations for changes to Amendment C119 are made in response to submissions received.



Above: Bunya Pine, ESO4 Code 245 – Outlook Drive Road Reserve, Eaglemont

2. BACKGROUND

2.1 SCOPE

Banyule City Council have commissioned an arboricultural Expert Witness Statement responding to concerns submitted in regards to proposed Amendment C119bany to the Banyule Planning Scheme. The amendment – which proposes to apply Schedule 4 to the Environmental Significance Overlay (ESO4) to an additional 95 significant trees within Banyule on a permanent basis (and also to remove the ESO4 from two properties where the trees have been legally removed) – was exhibited from 3 August to 8 October 2021. Thereafter, Council considered all fifteen submissions at its meeting on 6 December 2021, and resolved to refer all submissions to Panel. Key issues in submissions that sought changes to the amendment included concerns with the inclusion of specific trees and more general concerns with the ESO4 policy including permit triggers, methodology, and necessity.

For the purposes of responding to concerns raised regarding specific trees to be included in the amendment, selected site inspection and vegetation assessments were undertaken on 21 February. Site photos taken at that time are presented in Section 5 and Appendix E of this report.

This report has been prepared in accordance with *G7: Guide to Expert Evidence*, Planning Panels Victoria

2.2 QUALIFICATIONS, EXPERIENCE, AND AREA OF EXPERTISE

I, Nicholas Paul Withers of 10/101 Rattray Road MONTMORENCY VIC 3095, declare that:

- My extensive professional practice in the field of arboricultural assessment and reporting throughout Victoria (both within and for private and public organisations) qualifies me to make the assessments and recommendations regarding the significant trees and areas of vegetation for inclusion in the ESO4 Schedule as part of Planning Scheme Amendment C119bany;
- My extensive professional experience working directly with the application of Banyule's ESO4 Schedule qualifies me to make assessments and judgments regarding its methodology and its capacity to achieve its planning objectives;
- I prepared an Honours Thesis investigating Landscape Heritage in Victoria and I have the qualification necessary to fulfil my role as an Expert Witness for arboricultural and landscape matters (Bachelor of Applied Science in Horticulture with Honours, University of Melbourne 2001);
- I have extensive experience in the arboricultural assessment and significance assessment of trees and areas of vegetation listed with Heritage Victoria, National Trust, and in Banyule's ESO4;
- I have extensive experience over a seventeen-year period providing Expert Witness evidence to the Victorian Civil and Administrative Tribunal; and,
- I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.



Nick Withers B.ASc*(Hons)* *3 March 2022*

2.3 ADDITIONAL REPORTING

No additional, independent assessments, tests, or analyses were deemed necessary for the preparation of, or used to inform, this report.

(…Section 2 continued)

2.4 FACTS, MATTERS, AND ASSUMPTIONS

- **ESO4** and **The Schedule** refer to Schedule 4 to Clause 42.01 *Environmental Significance Overlay* in the Banyule Planning Scheme;
- **Significant Tree/s** refers to Significant Trees and Areas of Vegetation as listed in, and proposed for inclusion in, Schedule 4 to Clause 42.01 *Environmental Significance Overlay*;
- **Significance** refers to defined values associated with, and accorded to, Significant Trees as detailed in *Significant Tree and Vegetation Study*, Centre for Urban Horticulture, University of Melbourne, May 1999;
- **The Amendment** refers to Amendment C119 to the Banyule Planning Scheme.
- **Critical Root Zone (CRZ)** refers to the area around a significant tree where ESO4 planning approval for works is triggered, as defined in the Schedule.
- The assessment of specific trees detailed in this report in terms of their overall condition has been made in accordance with the descriptors detailed in Appendix A of this report. These must be referenced when reading this report.

3. INSTRUCTIONS

3.1 To enable the preparation of this report I have received written and verbal instructions from Nicola Rooks – Strategic Planner, Banyule City Council dated 9 February 2022;

3.2 To review and consider the appropriateness or otherwise of the methodology (including criteria and expertise used) and purpose for identifying significant trees in proposed Amendment C119bany;

3.3 To respond to issues raised in submissions #5, #9, #12 & #13 relating to properties:
- 2 Somerset Drive, Viewbank (*ESO4 Code 423*)
- 97 Hawdon Street, Heidelberg (*ESO4 Code 696*)
- 16 Brooke Street, Eaglemont (*ESO4 Code 721*);

3.4 To make recommendations about any changes to the Amendment C119 that might be necessary in response to submissions to address any arboricultural issues; and,

3.5 To have regard to the Panel Direction 13 b) in its 2 February 2022 Directions (a summary of case studies of the application of the ESO4 to date) and provide an opinion on the use and application of the ESO as a mechanism to safeguard significant trees versus other possible options.

4. DOCUMENT REVIEW

The following primary documents have been reviewed in the preparation of this report:

- *G7: Guide to Expert Evidence*, Planning Panels Victoria
- *Part A Submission, Banyule City Council as Planning Authority, Amendment C119bany to the Banyule Planning Scheme*, 28 February 2022
- Schedule 4 to Clause 42.01 Environmental Significance Overlay, *Banyule Planning Scheme*
- *Significant Tree and Vegetation Study*, Centre for Urban Horticulture, University of Melbourne, May 1999;
- *Maribyrnong Planning Scheme Amendment C163mari Panel Report*, 27 July 2021
- *National Trusts of Australia Significant Tree Register,* National Trust of Australia (Victoria), 2020

5. ESO4 METHODOLOGY AND APPLICATION

5.1 HISTORY OF THE ESO4

In the late 1990's Banyule City Council engaged the University of Melbourne's Burnley College to prepare a *Significant Tree and Vegetation Study* (1999). The extraordinary diversity of Banyule's trees and landscapes, and their contribution to Banyule's rich and unique blend of natural and urban characteristics, has been recognised and formally celebrated at a municipal level since the founding of the Ivanhoe River Parklands Protection League the mid-1950's.

The identification of significant individual trees and groups of trees in Banyule was first presented in 1982 by the Warringal Conservation Society in their publication *Register of Significant Trees in Heidelberg*. Conservation studies undertaken in the Municipality in the 1990's included volumes specifically dedicated to Banyule's trees and landscapes, and – together with the *Significant Tree and Vegetation* Study (1999) – culminated in a list of selected 'trees' (a term thereafter inclusive of 'groups of trees' and 'areas of vegetation') that formed the basis of Amendment C5 (2001) to Schedule 4 to the *Environmental Significance Overlay* (ESO4) in the Banyule Planning Scheme. This Schedule – formally titled **Significant Trees and Areas of Vegetation** and initially applying to 530 sites across Banyule – is now one of more than ten Environmental and Landscape overlays in Banyule's Planning Scheme. However, it is the only such Schedule in the Scheme that specifically identifies, and affords statutory protection to, individual trees, and is one of few Clause 42 planning overlays in the State of Victoria that afford statutory protection to individual trees.

5.2 EXISTING METHODOLOGY (CRITERIA AND EXPERTISE) FOR IDENTIFYING SIGNIFICANT TREES IN PROPOSED AMENDMENT C119

The appropriateness of the methodology and purpose for identifying significant trees in the proposed Amendment is best investigated by a review of the existing significance criteria and their descriptors.

The Banyule 1999 significance criteria were developed to respond specifically to Banyule's significant landscape assets. These unique criteria and descriptors was incorporated into the Banyule Planning Scheme by Amendment C5 (2001) to Schedule 4 to the *Environmental Significance Overlay* (ESO4).

As detailed in the *Significant Tree and Vegetation Study* (1999), "Criteria for the assessment of trees and vegetation in the City of Banyule are broader than the National Trust criteria for significant trees, as they also relate to groups of trees and vegetated areas as habitat, in addition to individual trees" (p.5). Whilst National Trust significance criteria have developed to an extent in the intervening years, their criteria still do not accommodate groups of trees or areas of vegetation. This is important in the Banyule context as the municipality has several avenues of trees of high horticultural and aesthetic significance, and large areas of indigenous vegetation of high botanical and remnant significance.

Accordingly, the ongoing appropriateness of the use of Banyule's existing, tailored significance criteria is evidenced in Table 5.2.1 overleaf, where all current National trust significance categories are captured by the Banyule 1999 criteria. Whilst a few sub-category descriptors are not captured (i.e., Unique Location, Spiritual/Religious, and contemporary community associations), as the National Trust currently has no trees on its Significant Tree Register listed for such significance, utilising the National Trust criteria, or amending these criteria in a fashion similar to the significance criteria identified in the *Maribyrnong Planning Scheme Amendment C163mari Panel Report* 2021 (p. 8), to strengthen the application of ESO4 Significance Assessments in the Banyule context is unnecessary.

5.2.1 Significance Criteria Comparison – Existing Banyule, Current National Trust, and Maribyrnong Modified Significant Tree Criteria

Existing Banyule (1999) Significance Criteria		Current National Trust Significance Criteria		Already Captured by BCC 1999	Maribyrnong 2022 Modified National Trust Significance Criteria		Already Captured by BCC 1999
Category	**Descriptor**	**Category**	**Descriptor**		**Category**	**Descriptor**	
Landscape	A tree or group of trees with outstanding aesthetic value or which frame or screen views, or act as a landmark.	***Scientific***	Horticultural or genetic value	✓	***Horticultural or genetic value***	Any tree which is of horticultural or genetic value and could be an important source of propagating stock, including specimens that are particularly resistant to disease or exposure. This could include Australian native, locally indigenous or exotic tree species.	✓
Size	Any tree of outstanding size in height, girth or canopy spread.		Important source of seed or propagating stock	✓		A tree or group of trees that are of ecological or environmental significance. These trees may provide habitat value or contribute significantly to a greater habitat corridor.	✓
Age	Any tree of an age which makes it old or venerable for its species or variant.		Particularly resistant to disease or exposure	✓	***Unique location or context***	The tree or trees occur in a unique location or context, providing a unique contribution to the landscape.	X
Botanical	A tree which is rarely found in the wild or in cultivation.		Species or variety that is rare or of a very localised distribution	✓	***Rare or localised distribution***	Any tree of a species or variety that is rare, or is of very localised distribution. This could include a threatened indigenous or endemic species within its locality, end of natural range, disjunct community or a rare exotic specimen	✓
Horticulture	Any tree which is of outstanding horticultural or genetic value, and which could be an important stock for future propagation.		Remnant native vegetation	✓	***Particularly old specimen***	Any tree that is particularly old or venerable.	✓
Historic	Any tree with a specific historic or commemorative association		Outstanding for its size	✓	***Outstanding size***	The outstanding size of a tree will relate specifically to the tree species and may vary considerably depending on height, canopy spread or diameter at breast height.	✓
Form	Any tree with an outstanding, unusual, abnormal or curious growth form.		An outstanding example of the species	✓	***Aesthetic value***	The tree is a particularly well-formed example of the species that is in a location that makes it striking in the landscape. The loss of a tree in this category would result in a substantial change to the local landscape.	✓
Remnant	Trees which survive from the pre-European era.	***Social***	Unique location or context	X	***Curious growth habit***	Any tree which exhibits a curious growth form or physical feature such as abnormal outgrowths, natural fusion of branches, severe lightning damage or unusually pruned forms.	✓
Habitat	A tree or group of trees with outstanding value as habitat or niche for native flora and fauna.		Contribution to landscape	✓	***Historical significance***	The tree is of importance in the culture and natural history of the City of Maribyrnong. Any tree commemorating a particular occasion, individual or associated with an important historical event may be considered in this category.	✓

Continued over …

… 5.2.1 Significance Criteria Comparison continued

Existing Banyule (1999) Significance Criteria		Current National Trust Significance Criteria		Already Captured by BCC 1999	Maribyrnong 2022 Modified National Trust Significance Criteria		Already Captured by BCC 1999
Category	**Descriptor**	**Category**	**Descriptor**		**Category**	**Descriptor**	
Aboriginal	A tree which has associations with aboriginal culture or heritage	*… social continued*	Associated with Aboriginal activities	✓	***Connection to Aboriginal culture***	A tree associated with aboriginal activities or culture. For example, scarred or corroboree trees.	✓
			Important landmark	✓	***Outstanding example of species***	Any tree that is an outstanding example of the species at an international/national/ state/regional/ local level or of particular aesthetic value.	✓
			Spiritual and religious associations	X	***Remnant***	Any tree that is likely to predate European development of the area. This puts the trees in the region of 100-200 years old.	✓
			Contemporary association with the community	X	***Outstanding habitat***	The tree is observed to have significant hollows for avian fauna or is clearly being used as a major food source for fauna.	✓
		Historic	Forms part of an historic park, garden or town	✓			
			Commemorative plantings	✓			
			Associated with an important event	✓			
			Associated with an important person, group or institution	✓			
		Aesthetic	A really great looking tree	✓			
			Exhibits curious growth form or unusual physical features	✓			
			Is a better than average example of its species, or a tree in its location	✓			

(…Section 5.2 continued)

Subsequently, as all other categories and descriptors are accommodated by, and readily attributable to, existing Banyule 1999 criteria, the integrity of the current significance criteria remains strong, and their comparative simplicity strengthens the appropriateness of their ongoing application in the Banyule context.

To undertake such significance assessments, the relevant qualifications and expertise of consultants conform with the qualifications and expertise necessary for in accordance with AS4970-2009 *Protection of Trees on Development Sites*, as detailed in Section 1.4.4 of the Standard, with "specific knowledge and skills" paramount.

Thereafter, new trees and areas of vegetation nominated and recommended for inclusion in the ESO4 schedule are benchmarked against existing listings, with considerations given to existing protections/controls also. Trees with possible in indigenous cultural heritage attributes are assessed on those grounds by relevant indigenous authorities.

5.3 THE SUITABILITY OF THE CURRENT "CRITICAL ROOT ZONE" AS A TRIGGER IN THE SCHEDULE TO MANAGE CONSTRUCTION IMPACTS TO SIGNIFICANT TREES

Schedule 4 to the Environment Significance Overlay details that: *A permit is not required to construct a building or carry out works outside the critical root zone (calculated as extending for a distance of no less than five metres beyond the drip-line) of any significant tree specified in the table to this clause.*

The University of Melbourne's 1999 study on which the Schedule was based provided two options to calculate the Critical Root Zone (CRZ) of a tree. The first – Formula 1 – was based on the Matheny and Clark (1998) method, which primarily involves using a tree's trunk diameter at breast height (DBH) to infer the radial area around a tree within which proposed works must be assessed for their suitability by a qualified consulting arborist. The second formula they offered – and the formula subsequently accommodated in the Schedule under Amendment C5 (2001) – was detailed as follows in Appendix 9 of the study:

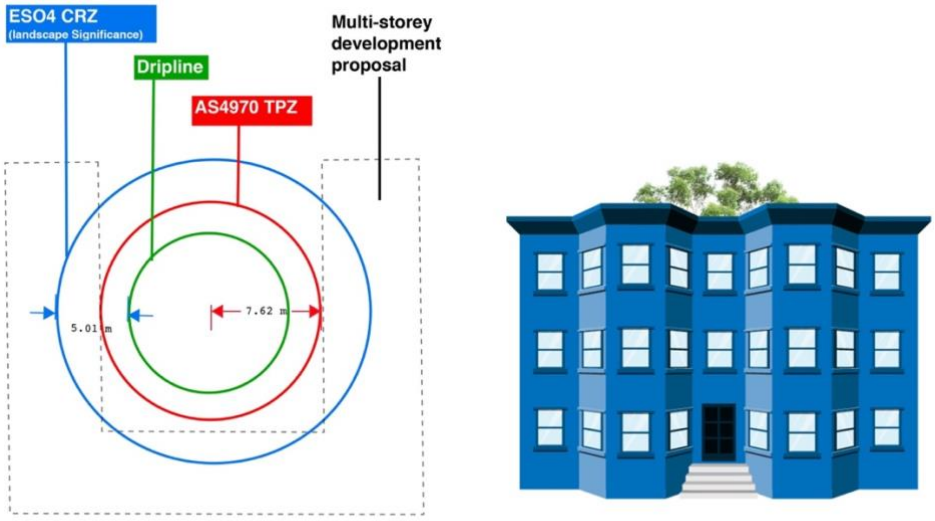
> **Critical Root Zone - Formula 2**
>
> In the mid 1980's, the National Trust of Australia (Vic), concerned at development impacts on trees listed on the Significant Tree Register of Victoria and the impact of development on trees generally, promoted the concept of a 5 metre 'donut' beyond the canopy as a minimum tree protection zone. Whilst disarmingly simple, this formula recognises that tree roots do not stop at the canopy dripline and that tree canopies rarely exhibit perfect asymmetry. (p.36)

Since the inclusion of the Schedule in the *Banyule Planning Scheme* in the early 2000's, the broader use of 'critical root zones' as a measure of the area around a tree required to suitably assess and manage proposed development impacts has been superseded in Australia by the creation and use of 'Tree Protection Zones' (TPZs) calculated in accordance with AS4970-2009 *Protection of Trees on Development Sites*.

Whilst a re-wording of the ESO4 Schedule is neither within the objectives of this report, nor within the proposed Schedule amendments prepared under C119, a formal recommendation for the supplement or replacement of the existing Critical Root Zone definition with another method is – in any case – not required.

It is critically important that although an assessment of direct, biological development impacts to significant trees is – effectively – triggered by the Schedule wording, such purely biological tree protection frameworks (i.e., AS4970-2009) account for neither tree significance nor for potential development impacts to that significance, as Figure 5.3.1 overleaf demonstrates.

5.3.1 Development works with no AS4970 TPZ impact but compromising ESO4 Landscape Significance



As simplistic as this example is, it nevertheless demonstrates that the biological maintenance of tree's arboricultural condition is an assessment distinct from, and wholly subsequent to, assessments aimed at maintaining a tree's significance contribution. It is for these reasons that Amendment C5 established the CRZ trigger, and why – having been consistently applied to Council's significant tree program since 2001 – it remains successful in its application to satisfy the objectives of the ESO4 overlay.

This success is more broadly discussed in Sections 5.4 and 5.5 of this report. However, in addition to the above, if – for example – the AS4970 TPZ calculation was to be substituted into the schedule as the permit trigger, the result would be that the need for planning approval for works in the vicinity of a significant tree could only be determined by a qualified arboricultural consultant.

An example of why such a trigger could by necessity only be formally determined by qualified arboricultural consultants, as opposed to the maintaining the existing canopy dripline triggers, is demonstrated in Figure 5.3.2 below. However, and more importantly, Figure 5.3.2 demonstrates how the CRZ formula allows sufficient space around the tree for the ongoing development of its root system, thereby enabling it to maintain its condition and individual significance contribution over time.

5.3.2 Diagram indicating AS4970 TPZ and ESO4 CRZ trigger areas over time (Code 083 at 2 Moola Close)



Thereafter, maintaining the existing CRZ as the permit trigger allows for significance characteristics such as canopy form to be included in the development impact assessment. Whilst development impacts to or near a tree's canopy may not compromise or undermine its condition (refer again to Figure 5.3.1), they may severely impact the significance of the tree if – for example – it is identified for its significant form.

As demonstrated in Figure 5.3.3 below, two trees with the same AS4970 TPZ area can have different canopy characteristics. This example further justifies the use of the Schedule's Critical Root Zone formula whilst also responding the Schedule's objectives to protect and enhance significant trees, as a tree's form characteristics alone (which include, but are not limited to, canopy characteristics) can be sufficient for the identification and ascription of Significance.

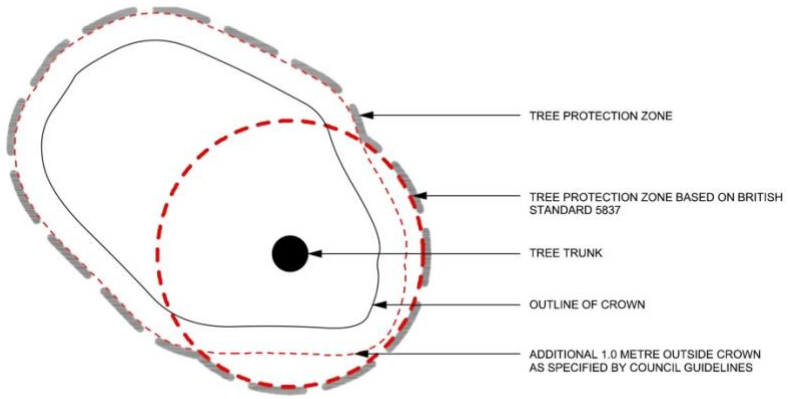
5.3.3 Capacity of the ESO4 CRZ trigger to capture individual canopy characteristics



The benefit of a root zone formula that is tailored to, and highly responsive to, an individual tree's condition and its significance is demonstrated again in Figure 5.3.4 below. The City of Whittlesea's Tree Protection Zone Standard for the protection of mature river red gums in a planning context further evidences the use and suitability of a formula that accounts for individual canopy characteristics in the determination of tree protection and permit requirements. The City of Whittlesea's formula:

a) Supersedes the AS4970 formula;
b) Incorporates instead a tree's calculated TPZ area based on British Standard BS5937^; and,
c) Accommodates canopy characteristics as fundamental to the designated 'TPZ' area.

5.3.4 City of Whittlesea's Tree Protection Zone Standard



^ British Standard BS5937 allows a greater TPZ area than does the AS4970 formula, which limits any TPZ to a maximum of 707 m^2 [equivalent to a maximum TPZ radius of 12 metres]

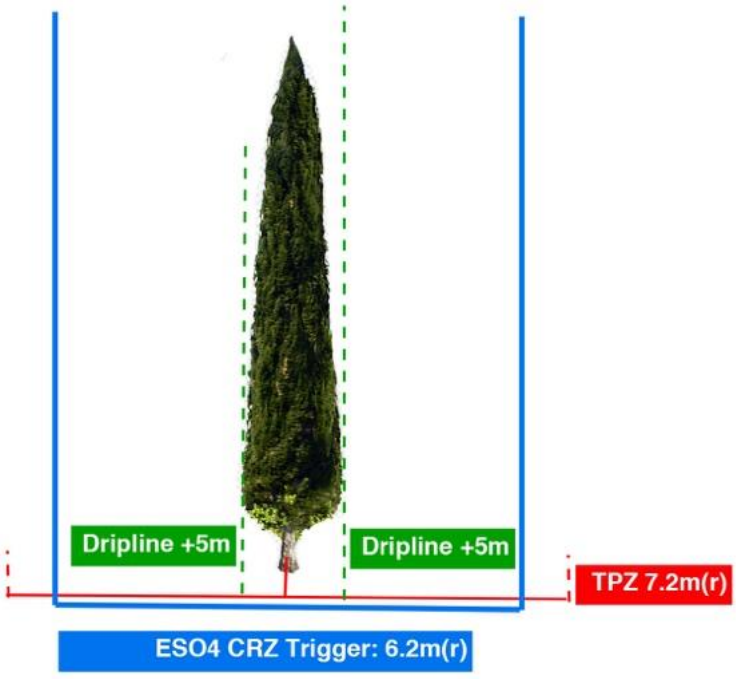
The closest that the ESO4's Critical Root Zone trigger comes to failing the Schedule's objective to protect and enhance significant trees is in its consideration of trees with upright, fastigiate canopy forms such as Mediterranean cypress (*Cupressus sempervirens*).

However, as demonstrated in Figure 5.3.5 (below), any failing is marginal. This is because any proposed development works exempt from other planning approval requirements (i.e., single-dwelling construction in a General Residential Zone 1) that are to occur more than 6.2 metres from the trunk of this theoretical ESO4-protected tree (i.e., outside the CRZ and thereby exempt from the need for ESO4 approval) would not compromise its condition or significance characteristics.

This is because works across one quadrant of its TPZ at this setback would impact less than 4% of the TPZ area, and provided arboricultural supervision occurred at the time of the works, the works would constitute a minor, acceptable TPZ impact in accordance with AS4970-2009 *Protection of Trees On Development Sites*.

In fact, the exact circumstances described here apply to Tree #721 at 16 Brooke Street (discussed in Section 6.3 of this report), where the form of that tree is such that in at least two quadrants, the TPZ radius is greater than the CRZ radius (14.3m versus 14.0m as detailed in Appendix E). These rare circumstances are the only times where an AS4970 TPZ trigger would capture this anomaly where the CRZ trigger would not. However, based on the author's broader arboricultural experience with such tree species, it appears that if addressing such anomalies was ever to be pursued, simply increasing the defined CRZ to a 6-metre 'donut' would accommodate almost all such discrepancies.

5.3.5 Example of the CRZ trigger nearly capturing individual canopy and AS4970 TPZ characteristics



5.4 ESO4 AS A CONTROL TO MANAGE CONSTRUCTION IMPACTS TO SIGNIFICANT TREES

Unlike all other Environmental and Landscape planning scheme overlays in Banyule, the ESO4 includes a trigger for buildings and works in addition to standard permit triggers for the removal, destruction, or lopping of protected vegetation.

Many Clause 42 *Environmental and Landscape* planning scheme overlays in Victoria (e.g., Nillumbik and Whitehorse SLOs) trigger the requirement for arboricultural assessment regarding buildings and works in addition to proposals to remove, destroy, or lop protected vegetation. Given the degree to which trees and vegetation can be impacted by development works, and given that not all developments always require planning approval (i.e., as-of-right single dwelling construction), specific Clause 42 permit triggers are highly appropriate.

The Banyule Planning Scheme guides and directs the need for construction impact assessments to protected vegetation is primarily under Clause 43 *Heritage and Built Form* overlays, namely Schedules 8 and 12 to Clause 43.02 (Design Development Overlay). Thereafter, depending on the definition of 'protected vegetation' incorporated into these overlays (e.g., DDO8 and Schedule 1 to the Vegetation Protection Overlay in the Banyule Planning Scheme, which affords supplementary buildings and works protection only to Victorian native species of certain dimensions) Banyule's Clause 43 Overlays do not always fulfil tree protection objectives in the broader municipal development context.

These are crucial considerations in a planning context because trees are not objects in stasis. A development undertaken in the vicinity of a tree today might have the potential to impact it far more severely than the same development 10 years ago, with corresponding increases in hazard issues. Unlike inundation areas easily mapped as part of Special Building Overlays, trees are dynamic organisms that change in their form and condition over time. As such, the use of 'canopy dripline' as a guide to the need for planning approval/s in a construction context functions most sensibly in a planning context (as is the case with ESO4, DDO8, and DDO12 in the Banyule Planning Scheme). This is because such a trigger allows council planners and planning applicants to determine by acceptably-unqualified visual assessment (e.g., aerial photography and/or on-site inspection) whether the need for planning approval for construction activity in the vicinity of a tree is, or is likely to be, triggered. Where this occurs, the capacity to assess such impacts is – by necessity – referred to qualified arboricultural professionals.

However, as the objective of the ESO4 is to *Protect and Enhance*, its more rigorous trigger to the need for the assessment of construction impacts to significant trees – i.e., beyond the dripline, as opposed to 'within the dripline' as specified in DDOs 8 and 12 – is wholly justified. This is because 'enhancement' (effectively the capacity for the maintenance of a tree's ongoing significance) is beyond the scope and suitability of construction impacts assessed under AS4970-2009 *Protection of Trees on Development Sites* alone.

Of critical importance here is the understanding that the need for planning approval does not proscribe such approval. Rather, it merely prescribes that subsequent and qualified arboricultural assessment is necessary to assess the suitability or otherwise of any development planning proposal. In addition, an ESO4 trigger rarely applies to the entirety of the Land or affected property in question, and as demonstrated in Sections 5.5 and 5.6 overleaf, the ESO4 control neither restricts development within the Critical Root Zone trigger area, nor proscribes the capacity for approving ESO4 tree removal where arboriculturally appropriate.

5.5 ESO4 DEVELOPMENT CASE STUDY – 8 DONALDSON STREET IVANHOE

This case study is based on the author's own experience with the application of the ESO4 control whilst employed as a Development Planning Arborist with Banyule City Council.

Following an application to develop 8 Donaldson Street in the early 2010's, it was determined that an additional ESO4 planning trigger applied to the development as works were proposed within the Critical Root Zone of an adjoining ESO4 tree (Code 339) – refer to Figure 5.5.1, below. Subsequent planning applications were refused and modified on the grounds that proposed encroachments into the AS4790-2009 TPZ – whilst acceptable to some extent under the Standard – did not satisfy the ESO4 objective "*To Protect **and Enhance*** (my emphasis) *trees and areas of vegetation that are significant*."

A modified development proposal prepared to show all structures located wholly outside the TPZ was eventually supported by Council and approved by the Victorian Civil and Administrative Tribunal on the grounds the objectives of the ESO4 were met in this instance; The significant tree was both protected and sufficiently enhanced by the development because there was no TPZ impact whatsoever.

The development's curved walls arcing the edge of the AS4790-2009 TPZ (as calculated at that time of the application – refer to Figure 5.5.2, below) are an outstanding example of the capacity for the existing ESO4 control to enable the development of a site – including the construction of buildings within a Critical Root Zone – at the same time as protecting and enhancing significant trees.

5.5.1 8 Donaldson Street c.2010



Above: Critical Root Zone Trigger within 8 Donaldson Street IVANHOE (affected property) Circa 2010 for ESO4 Code 339 - River Red Gum

5.5.2 8 Donaldson Street c.2016



Above: Development outcome within 8 Donaldson Street IVANHOE (affected property) Circa 2016 for ESO4 Code 339 - River Red Gum

5.6 ESO4 ARBORICULTURAL CASE STUDY – 286 NELL STREET WEST WATSONIA

This case study is based on the author's own experience whilst practicing as a private arboricultural consultant.

Following severe winds and major limb failures in late 2019, the owner of a significant tree (ESO4 Code 352) commissioned an independent arboricultural assessment. The failure of the entire central portion of the crown during the windstorm left remaining limbs – limbs already predisposed to failure – dangerously exposed. Given the size of the tree (20m high and 17m in spread), its high-use and high-target location, and the very poor pruning practices undertaken in the past, the tree was assessed as an unmanageable arboricultural risk. A planning application for the removal of the tree was recommended, submitted, and subsequently approved.

The full removal of Tree 352 was completed in early 2020, and its removal from the Schedule is now proposed as part of Amendment C119.

5.6.1 Code 352 November 2019





6. ARBORICULTURAL RESPONSES TO OBJECTIONS SUBMITTED IN REGARDS TO AMENDMENT C119

6.1 **Submission #9 and #13** – ESO4 CODE 423 at 2 Somerset Drive VIEWBANK (*Ulmus glabra* 'Lutescens')

Significance Contribution: Landscape

Objection Summary (Third-Parties): Not native; already protected; safety risk; too large for block; invasive roots.

The tree could not be accessed for the purposes of this report. However, as indicated by the response from council's arborist to the objection (*Part A Submission* – Attachment 6, p.7) the additional planning protection status afforded to the tree as a result of inclusion in The Amendment does not proscribe the existing capacity to manage arboricultural risk and/or direct or indirect property damage. Thereafter, the extent of management required to address any such issues does not rule out tree removal; as demonstrated in Section 5.6 of this report, arboricultural hazard can and does override significance. However, regardless of a tree's planning protection status, any such issues must be arboriculturally evidenced – in this instance to the satisfaction of the Responsible Authority and to the satisfaction of the owner of the tree.

Thereafter, perceived issues such as excessive size and non-native provenance do not weaken the tree's suitability for inclusion in the Amendment. Rather, such considerations can in fact determine a tree's significance, with 'Size,' Botanical,' and 'Horticultural' being defined significance criteria.

Whilst the size of a tree can increase the severity of the consequences of arboricultural risk, such consequences are not directly attributable to tree size alone, and location context is fundamental. For instance, a small tree with structural flaws in kindergarten can pose much greater arboricultural risk than would a very large tree with structural flaws in a bushland reserve. Ultimately, as previously stated, any such risk must be arboriculturally evidenced, and where the risk is extreme and otherwise unmanageable, ESO4 planning approval for tree removal is issued.

6.1.1 Code 423 Significance Statement

Significant Trees and Vegetation of the City of Banyule

Banyule Code	423
Botanical Name	Ulmus glabra 'Lutescens'
Common Name	Golden Elm
Location	2 Somerset Drive
Suburb	VIEWBANK

Significance

Significance Level	Local			Significance Statement
Landscape	Yes	Historic	No	This tree is significant for its size and for its aesthetic contribution to the immediate and local landscape. It is significant at the Local Level.
Size	Yes	Form	No	
Age	No	Remnant	No	
Botanical	No	Habitat	No	
Horticulture	No	Aboriginal	No	

Details

No Of Trees	1
Estimated Age	70
Height(M)	15
Spread(M)	17
Circumference(M)	2.76
Overall Condition	Good
Health	Good
Form	Good
Structure	Fair
Public Ownership	No



6.1.2 Tree 423, February 2022



6.2 **Submission #12** – CODE 696 at 97 Hawdon Street HEIDELBERG (*Quercus robur*)

Significance Contribution: Landscape. Size. Age.

Objection Summary (Owners): Negligible landscape value; restriction to future buildings and works/development of the site, ; damage to property and services; species not rare in Banyule.

The site inspection of Tree 696 confirmed the validity of council's arborists response to the objection (*Part A Submission* – Attachment 6, pp.8,9). The tree is in good overall condition and is indeed highly prominent in a landscape perspective (noting that 'landscape' is only one of Tree 696's three significance attributes). It has a very large landscape presence when viewed from southerly aspects in the vicinity of Burgundy Street, including Yarra, Hawdon, and Mount Streets.

Thereafter, the need for, and suitability of, the tree's removal to address issues of property and service damage was not directly apparent at the inspection, as the upgrade and maintenance of failing structures (i.e., retaining walls), uneven surfaces, and plumbing services is not directly attributable to the tree, and any necessary repairs and mitigation works do not appear to necessitate tree removal at this time.

As detailed in Council's response also, ESO4 planning-protection to the tree will only trigger the need for additional planning approvals in regards to new development works. Considering the objection point regarding the presence of Tree 696 as constraining the full-development of the site in accordance with current zoning and structure plan context affecting its location (accepting that any such development would still require VPO5 planning approval for the tree's removal), it is emphasised that the broader planning context would be a significant consideration as part of any such application.

Presuming Tree 696 to still be in good overall condition at the time of any such proposal and its assessment, the extent to which supplementary ESO4 protection would further constrain such a proposal is beyond the remit of arboricultural opinion. However, what is worthy of mention in this regard is that as a broadscale mechanism for the protection of trees and vegetation, Tree 696's protection under planning law at least allows for planning context to be considered as part of any development proposal. In the author's opinion, such a framework is far superior to the use of local laws as a mechanism for the protection of trees and vegetation (which are prolific in many other metropolitan municipalities) as any relevant planning merit and/or context for works to, or near, protected trees is most often discounted from such assessment.

6.2.1 Code 696 Significance Statement

Significant Trees and Vegetation of the City of Banyule

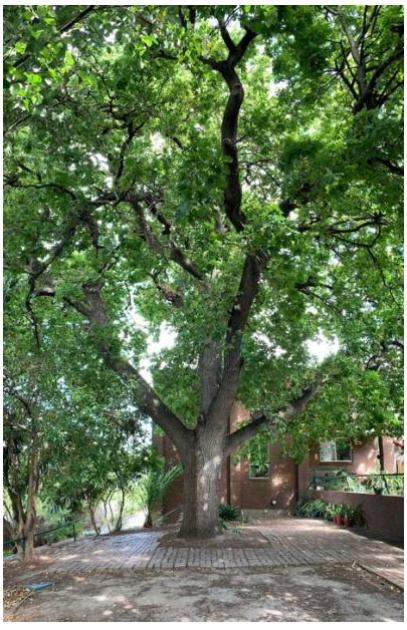
Banyule Code	696
Botanical Name	Quercus robur
Common Name	Common or English Oak
Location	97 Hawdon St
Suburb	HEIDELBERG

Significance				
Significance Level	Local			Significance Statement
Landscape	Yes	Historic	No	This tree is significant for its size and age as well as impact on immediate landscape. It is significant at the Local level.
Size	Yes	Form	No	
Age	Yes	Remnant	No	
Botanical	No	Habitat	No	
Horticulture	No	Aboriginal	No	

Details	
No Of Trees	1
Estimated Age	110
Height(M)	20
Spread(M)	20
Circumference(M)	3.04
Overall Condition	Excellent
Health	Excellent
Form	Excellent
Structure	Excellent
Public Ownership	No



6.2.2 Tree 696, February 2022



6.3 **Submission #5** – ESO4 CODE 721 at 16 Brooke Street EAGLEMONT (*Araucaria bidwillii*)

Significance Contribution: Size. Historic.

Objection Summary (Owner): Danger due to annual shedding of "seeds' (pinecones) and sharp, heavy branches; leaning upper canopy.

The site inspection of Tree 721 confirmed that the tree is in good overall condition (the canopy lean is neither a critical nor pending flaw), and whilst the hazard issues are clearly evident and management is directly required, at this time such management neither requires the full removal of the tree, nor any form of planning approval (regardless of the tree's inclusion in Amendment C119). Accordingly, the responses of Council's arborists to the objection (*Part A Submission* – Attachment 6, p.4) are valid. However, their responses are in no way disrespectful of the exceptional circumstances faced by its owners.

The challenges associated with the management of Bunya Pine (*Araucaria bidwillii*) pinecones in urban and residential locations is greatly appreciated from an arboricultural perspective. Not only are these challenges evident in terms of the arboricultural skill and timing required to manage these pinecones; also evident is the considerable and ongoing costs associated with such fine pruning on a regular basis.

The alleged 'annual' shedding of seeds appears anomalous. Whilst the development and shedding of Bunya pinecones is regular (the hazards of which are in no way discounted given that seed cones commonly weigh between five and ten kilograms and drop from the crown of these large trees), cones usually develop only every 2-3 years.

Pollen cones (which are thin and light, and pose almost no hazard) usually develop in mid-autumn, with the larger seed cones becoming fully-developed and ready to shed two summers later. Therein lies the window for arboricultural intervention, whereby the tree is climbed in the months after the development of the pollen cones and they are pruned out. Such works also reduce the potential for limb failures caused by falling cones.

6.3.1 Code 721 Significance Statement

Significant Trees and Vegetation of the City of Banyule

Banyule Code	721
Botanical Name	Araucaria bidwillii
Common Name	Bunya-Bunya Pine
Location	16 Brooke St
Suburb	EAGLEMONT

Significance

Significance Level	Local		
Landscape	No	Historic	Yes
Size	Yes	Form	No
Age	No	Remnant	No
Botanical	No	Habitat	No
Horticulture	No	Aboriginal	No

Significance Statement

This tree is significant because of its historic association with Mount Eagle estate. It is also significant as a result of its size. It is significant at the Local level.

Details

No Of Trees	1
Estimated Age	150
Height(M)	25
Spread(M)	15
Circumference(M)	3.48
Overall Condition	Good
Health	Good
Form	Good
Structure	Good
Public Ownership	No



6.3.2 Tree 721, February 2022



6.4 **Submissions 4 (HIA – general) and 8 (DELWP – specific)**

Both of these submissions raise / propose the use of the TPZ area calculation as defined in AS4970-2009 *Protection of Trees on Development Sites* as the single buildings and works permit trigger for the application of the ESO4. As is clear in council's response, such a consideration is beyond the scope of Amendment C119.

However, some comment is appropriate nevertheless, and – as detailed in Section 5.3 of this report – replacing or supplementing the existing Critical Root Zone formula (which is distinctly not arbitrary in a significance context) with the TPZ Area calculation as defined in AS4970-2009 *Protection of Trees on Development Sites*, would fail to adequately address and manage considerations of Tree Significance in an ESO4 development planning context (noting that few – if any – Clause 42 and Clause 43 schedules in Victoria incorporate the AS4970 TPZ Area calculation as a development trigger).

Thereafter other considerations presented in Submission 4 – whilst mostly broad-based and again beyond the scope of Amendment C119 – also warrant discussion. Most of these considerations are explored in Section 5 also. However, with specific regard to Submission 4's recommendation for an exemption to dead and dying trees to be included in any future amendment to the wording of the ESO4 Schedule, it is highlighted that such an exemption would wholly fail the identified significance of aboriginal scar trees and wayfinder trees, many of which – including specimens currently listed in the schedule – are dead.

6.4.1 Scar tree (ESO4 Code 236) at Summit Drive Reserve, EAGLEMONT



7. CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

The existing ESO4 Significance Criteria – originally tailored to the specific Banyule context – remain highly appropriate for nominating, assessing, and recommending additions to its ESO4 Schedule. Furthermore, as the significance criteria are highly reflective of industry norms and have been identified and structured by a highly reputable horticultural institution, and have functioned appropriately for more than two decades, they provide adequate direction to assist qualified assessors in determining significance.

The existing Critical Root Zone permit trigger in the ESO4 Schedule is the most appropriate and most effective mechanism for determining the need to assess potential and proposed development impacts to the condition *and significance* of listed trees, and – together with the ESO4 objectives and as demonstrated herein – appropriately and effectively enables and manages development whilst also successfully protecting and enhancing significant trees in accordance with the objectives of the Schedule.

All trees presented in Amendment C119 to the Banyule Planning Scheme have been confirmed as significant, and no trees presented in The Amendment have been demonstrated to be unsuitable for inclusion on arboricultural grounds. Accordingly, no recommendations for changes to The Amendment are made in response to submissions received.

7.2 RECOMMENDATIONS

- That Significant **Trees 423, 696, and 721** remain included in the Amendment;
- That all Significant Trees be included in the Amendment as proposed;
- That the existing Significance Criteria continue to be used to assess and identify new inclusions in the ESO4 Schedule; and,
- That the existing Critical Root Zone definition continue to be used as the ESO4 trigger mechanism for buildings and works proposed in the vicinity of significant trees.

Yours Faithfully,



Nick Withers B.ASc*(Hons)*

3 March 2022

2001 - 2003: Landscape Design Practice
2003: Local Laws Arborist, Bayside City Council
2003 - 2005: Consulting Arborist/Senior Consulting Arborist, ArborCo Pty. Ltd.
2005 - 2010: Arborist, Yarra Ranges Shire Council
2012 - 2017: Development Planning Arborist, Banyule City Council
2010 -2012 and 2017 ongoing: Arboricultural and Landscape Consultant.

PROVENANCE

Native	Generally defined in the scheme as Trees species naturally occurring in Victoria
Indigenous	The study area is within the species' natural range
Victorian Native	The species occurs naturally within the state, but not within the study area
Australian Native	The species occurs naturally in Australia, but not within the state referenced
Exotic	The species does not naturally occur in Australia
Remnant	Indigenous specimens and vegetation communities likely to have existed prior to European Colonisation

HEALTH

Good	Foliage cover is typical for the species, with no leaf discolouration from nutrient and resource deficiencies or toxicities, no symptoms of prolonged pest attack, and no areas of unnatural or concentrated dieback. Vigour is high as evidenced by foliage extension and good wound wood development where relevant.
Fair	Foliage cover is generally typical for the species, with minor leaf discolouration from nutrient and resource deficiencies or toxicities, symptoms of prolonged pest attack, and areas of unnatural or concentrated dieback apparent. Foliage extension and/or wound wood development has been subdued or stunted. Epicormic branches may be developing but are not numerous.
Poor	Foliage cover is stunted or minimal, there is major leaf discolouration from nutrient and resource deficiencies or toxicities, there is evidence of prolonged pest attack, large areas of unnatural or concentrated dieback apparent. Foliage extension and/or wound wood development is not apparent. A majority of the foliage is borne from epicormic branches.

STRUCTURE

Good	Major limbs are well formed with acceptable branch taper and unions appear to be strong with no signs of defects (included bifurcations etc). The tree has minimal defects throughout the trunk and limbs. There is no sign of root plate heave. The tree is unlikely to suffer major branch or trunk failure under normal environmental conditions.
Fair	Tree may exhibit minor structural defects that may be managed through formative pruning. Only minor wounds are present that do not affect the overall stability or structural integrity of the tree. Minor root damage may have occurred in the past. Defects present are likely to cause only minor branch failure under normal environmental conditions.
Poor	Tree has a poorly formed crown that is not symmetrical. Branch and or trunk taper may be unacceptable. Branch unions may exhibit significant defects that cannot be managed through formative pruning. Major root damage may have occurred and there may be evidence of root plate heave. Defects that are present may result in catastrophic failure of branches or trunk under normal environmental conditions.

FORM

Good	Typical for the species with even, symmetrical canopy spread and trunk form. Pruning has generally been undertaken in accordance with Australian Standards
Fair	Generally typical for the species but may include minor asymmetry, or overextended extended and/or weighted limbs that require management. Any pruning may not have been wholly or always undertaken in accordance with Australian Standards.
Poor	Heavily mismanaged, storm damaged, heavily asymmetric or malformed

OVERALL CONDITION is a basic summary of a tree's health, structural and formative elements as described above.

(Continued over…)

TREE SIZE

Large	12 metres high or more at maturity
Medium	8 - 12 metres high or more at maturity
Small	6 - 8 metres high or more at maturity

TPZ Tree Protection Zone. This is the radial area around the tree it requires to maintain its viability. Australian Standard AS 4970 – 2009: *Protection of Trees on Development Sites* identifies this radius as 12 times the diameter of the trunk measured at 1.4 metres.

SRZ Structural Root Zone. This is the radial area around the tree it requires to maintain its stability. Australian Standard AS 4970 – 2009: *Protection of Trees on Development Sites* notes that a larger area than the SRZ is required to maintain a viable tree (p. 12).

APPENDIX B - Survey Methodology

Data was recorded on site. Tree height and canopy width were estimated unless otherwise detailed, and condition indicators were assessed in accordance with the Visual Tree Assessment (VTA) methodology (Mattheck & Breloer, 1998). Diameters at breast height (DBH) and basal diameters were measured using a diameter tape. Structural Root Zone Calculations are based on the basal trunk diameter in accordance with AS4970-2009 *Protection of Trees on Development Sites* unless otherwise specified. Unless otherwise included, only trees and woody shrubs greater than 5 metres in height are included in the inspection process.

Data collected has been used to calculate the Structural Root Zone (SRZ) and the Tree Protection Zone (TPZ) and the total area of tree protection. These calculations, in combination with species' habits and tree condition, inform the acceptable level of intrusion into the tree protection zone throughout any future development. These calculations are based upon the Australian Standard AS4970-2009 *Protection of Trees on Development Sites*, with Structural Root Zone Calculations based on the basal trunk diameter.

The survey and assessment undertaken of all of the subject trees was made from a visual inspection from ground level only. No trees were climbed and no samples of soil, plant material or pest and disease infestation (if present) were taken for analysis. Species identification was carried out in the field. No plant matter or soils samples were taken. Defects not apparent from this ground-based visual inspection are excluded from the discussion within this report.

Additionally, this report is based upon the condition of the trees at the time of assessment only.

APPENDIX C - Bibliography and References

Significant Tree and Vegetation Study, Centre for Urban Horticulture, University of Melbourne, May 1999.

Register of Significant Trees in Heidelberg, Warringal Conservation Society (1982)

Schedule 4 to the Environmental Significance Overlay, *Banyule Planning Scheme*

AS4970-2009 *Protection of Trees on Development* Sites, Standards Australia.

Significant Tree Register (Nomination) Policy 2020, City of Maribyrnong, 2020

Matheny, N. and Clark, J.R. (1998), *Trees and Development: A Technical Guide to Preservation of Trees during Land Development*. International Society of Arboriculture.

National Trusts of Australia Significant Tree Register, National Trust of Australia (Victoria), 2020

Mattheck, C., and Breloer, H., (1994), *The Body Language of Trees*, The Stationary Office, London, UK.

Coder, K.D., 1996, *Construction Damage Assessments: Trees and Sites*, The University of Georgia, SC, USA.

Harris, R.W. Clark, J.R. & Matheny, N.P., 1999, *Arboriculture, Integrated Management of Landscape Trees, Shrubs and Vines*, 3rd edition. Prentice-Hall, Inc, USA.

Lonsdale, D., 2001, *Principles of Hazard Tree Assessment and Management*, The Stationary Office, London, England

Matheny, N.P. & Clark, J.R., 1994, *Evaluation of Hazard Trees in Urban Areas,* 2nd Edn., ISA Publications

Mattheck, C. & Breloer, H., 1998, *The Body Language of Trees – A Handbook for Failure Analysis,* The Stationary Office, Norwich, London.

Standards Australia 2007, *Australian Standard AS4373-2007, Pruning of Amenity Trees*, 14 March 2007.

APPENDIX D - Assumptions and Limiting Conditions

1. Any legal description provided to the author is assumed to be correct. Any titles and ownerships to any property are assumed to be correct. No responsibility is assumed for matters outside the consultant's control.

2. The author contracts with you on the basis that any property or project is not in violation of any applicable codes, ordinances, statutes or other local, state or federal government regulations.

3. The author has taken reasonable care to obtain all information from reliable sources. All data has been verified insofar as possible; however the author can neither guarantee nor be responsible for the accuracy of the information provided by others.

4. The author shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services at the current rate for expert evidence.

5. Loss of this report or alteration of any part of this report not undertaken by the author invalidates the entire report.

6. The Author retains copyright of this report. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by anyone but the client or their directed representatives, without the prior consent of the author.

7. This report and any values expressed herein represent the opinion of the consultant and the fee is in no way conditional upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

8. Sketches, diagrams, graphs and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural drawings, reports or surveys.

9. Unless stated otherwise: a) Information contained in this report covers only those items that were covered in the project brief or that were examined during the assessment and reflect the condition of those items at the time of inspection; and, b) The inspection is limited to visual examination of accessible components without dissection, excavation or probing unless otherwise stipulated.

10. There is no warranty or guarantee, expressed or implied by the author, that the problems or deficiencies of the plants or site in question may not arise in the future.

11. 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 consultant has been instructed to consider or to take into account in preparing this report have been included or listed within the report.

12. To the authors' 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 writer's experience and observations.

13. This agreement supersedes all prior discussions and representations between the author and the client on the subject, and is the entire agreement and understanding between the two parties.

14. It is assumed that the root distribution of all trees on site is largely symmetrical unless otherwise stated and that no previous root damage has occurred where none is currently visible.

15. It is assumed that the growing conditions for the subject trees does not manifestly change over the time prior, during or after the proposed works take place other than as a result of proposed works.

16. It is assumed that the all plans provided are true and correct.

APPENDIX E – TREE ASSESSMENT DATA FOR ESO4 CODES 423, 696, and 721

ESO4 ID	SPECIES	Provenance	Height X Spread (m)	DBH (cm)	CRZ radius	TPZ radius	Health	Structure	Form	TPZ area (m)	Comments
423	*Ulmus glabra* 'Lutescens' (golden elm)	Exotic	16 x 21	Not assessed	15.5m	Not assessed	Good	Not assessed	Good	Not assessed	Good canopy condition indicates regular treatment for elm leaf beetle.
696	*Quercus robur* (English oak)	Exotic	21 x 23	99	16.5m	11.9m	Good	Good	Good	445 m^2	High internal aesthetic and environmental amenity
721	*Araucaria bidwillii* (Bunya pine)	Australian native	25 x 18	119	14.0m	14.3	Good	Good	Good	642 m^2	Minor maintenance pruning required for damaged and broken branches.





