PRELIMINARY TREE ASSESSMENT

WILLS STREET, WARRAGUL
VIC 3820

PREPARED FOR: FREEWAY BUSINESS PARK P/L

CONSULTING ARBORIST: MATHEW SORENSON *Dip Arb*

DATE: 10/05/2022

REPORT NO. 22028

VERSION 1.2

Email: mathew@drouintreeservices.com.au

TABLE OF CONTENTS

TABLE OF CONTENTS

Document Control

Report Version	Date	Details
V.1	02/05/2022	Tree assessment as per the *Proposed Site Plan – 01001 29/04/22*
V.2	10/05/2022	Revised report after the removal of the footpath within the Freeway Reserve along the southern boundary

1. INTRODUCTION

1.1 BACKGROUND

1.1.1 Development of the land at 15 – 70 Wills Street, Warragul is proposed. The proposed development will include the subdivision of the site into a new industrial estate.

1.1.2 This report has been commissioned to assess all nominated trees on adjoining properties and road reserve(s) that may be impacted by the proposed development.

1.2 OBJECTIVES

1.2.1 Assess all nominated trees providing information on species, origin, age, dimensions, condition, useful life expectancy (ULE), significance and retention value.

1.2.2 Identify trees that require removal to facilitate the proposed design.

1.2.3 Assess the impact on retained trees from the proposed development.

1.2.4 Recommend strategies to minimise the impact from the proposed development on retained trees.

1.3 METHODOLOGY

1.3.1 A site assessment was performed by Mathew Sorenson on 20/04/2022.

1.3.2 Assessment of the tree population was performed using a visual, ground-based inspection method.

1.3.3 Trees were assessed individually and/or within groups and assigned an identification number ranging from **T1 – T23** (***'G'*** *following a tree identification number indicates a group of trees*).

1.3.4 Only tree roots visible from above ground level (surface roots) were assessed. Detailed inspections of tree root systems using root zone exploratory methods were not performed.

1.3.5 Diameter at Breast Height (DBH) and Diameter at Base (DAB) were recorded, as per Australian Standards (*AS 4970 – 2009*), using a diameter tape. Where access to the stem(s) of trees was unachievable (due to dense understory vegetation, dense low branch structure, undesirable form or private property), DBH & DAB were generously estimated.

1.3.6 Height and canopy spread were measured from the ground using a rangefinder and recorded to the nearest meter. Canopy spread was observed on the widest axis.

1.3.7 The trees were further assessed on age, health, structure, useful life expectancy (ULE), significance and retention value. These assessments were limited to visual observations from the ground only and based on the consulting arborist's knowledge and experience, using the descriptors provided in Appendix A – Tree Descriptors, pages 24 – 28.

1.3.8 Tree protection zones (TPZ) and structural root zones (SRZ) were calculated as per Australian Standards – Protection of trees on development sites (AS 4970-2009).

1.4 STATUTORY CONTROLS

1.4.1 The subject site is within the Local Government Area: **Baw Baw Shire** (Council)

1.4.2 The land is included in a Industrial 1 Zone (IN1Z) & Urban Floodway Zone (UFZ)

1.4.3 The land is subject to the following overlay(s):

- **Development Contributions Plan Overlay (DCPO)**

  Development Contribution Plan Overlay – Schedule 1 (DCPO1)
- **Environmental Significance Overlay (ESO)**

  Environmental Significance Overlay – Schedule 4 (ESO4)
- **Design & Development Overlay (DDO)**

  Design & Development Overlay – Schedule 8 (DDO8)
- **Design & Development Overlay (DDO)**

  Design & Development Overlay – Schedule 9 (DDO9)
- **Specific Controls Overlay (SCO)**

  Specific Controls Overlay – Schedule 1 (SCO1)

1.4.4 The site is included within an area of Aboriginal Cultural Heritage Sensitivity.

1.4.5 Portions of the site is included within a Bushfire Prune Area.

1.4.6 Pursuant to Clause 52.17 of the Victorian Planning Provisions, the removal of native vegetation (defined as plants indigenous to Victoria) within the subject property and adjoining road reserve may be subject to permit requirements.

1.5 SUBJECT PROPERTY LOCATION

Map 1.1. *Aerial Map (Nearmap 16/01/2022) with approximate site boundaries*

2. Tree Survey

2.1 Tree Locations

Figure 2.1. *Aerial Image (Nearmap 16/01/22) with numbered tree locations*

2.2 TREE DATA

ID	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Significance	Retention Value
T1	*Eucalyptus camaldulensis*	River Red Gum	Vic Native	Semi-Mature	73	18x6	Good	Good	30+	Ecological	Medium
T2	*Eucalyptus strzeleckii*	Strzelecki Gum	Indigenous	Young	21	12x3	Good	Good	30+	Ecological	Medium
T3	*Eucalyptus strzeleckii*	Strzelecki Gum	Indigenous	Semi-Mature	38	16x3	Good	Good	30+	Ecological	Medium
4G	*Acacia melanoxylon*	Blackwood	Indigenous	Young/Dead	38	5x2	Poor-Dead	Poor-Dead	0-5	Ecological	Low
T5	*Acacia melanoxylon*	Blackwood	Indigenous	Semi-Mature	23	9x4	Good	Good	10-20	Ecological	Medium
T6	*Eucalyptus camaldulensis*	River Red Gum	Vic Native	Semi-Mature	86	22x13	Fair	Fair	30+	Ecological	Medium
T7	*Allocasuarina torulosa*	Forest She-oak	Native	Semi-Mature	62	20x5	Fair	Fair	20-30	Amenity	Medium
T8	*Allocasuarina torulosa*	Forest She-oak	Native	Mature	43	18x4	Fair	Fair	20-30	Amenity	Medium
T9	*Allocasuarina torulosa*	Forest She-oak	Native	Semi-Mature	46	16x4	Fair	Poor	10-20	Amenity	Low
10G	*Acacia melanoxylon*	Blackwood	Indigenous	Semi-Mature	15	5x2	Fair	Fair	0-5	Low	Poor
T11	*Eucalyptus nicholii*	Black Peppermint	Native	Young	81	17x8	Fair	Fair	10-20	Amenity	Low
T12	*Angophora costata*	Smooth Bark Apple	Native	Mature	64	17x8	Good	Good	30+	Amenity	Medium
T13	*Eucalyptus nicholii*	Black Peppermint	Native	Semi-Mature	65	18x7	Fair	Poor	5-10	Low	Low
T14	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	96	17x10	Good	Fair	30+	Amenity	Medium
T15	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	75	18x9	Good	Fair	30+	Amenity	Medium
T16	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	64	16x8	Good	Fair	30+	Amenity	Medium
T17	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	37	14x5	Poor	Poor	10-20	Low	Low
T18	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	36	15x7	Fair	Fair	30+	Low	Low
T19	*Angophora costata*	Smooth Bark Apple	Native	Semi-Mature	85	18x10	Fair	Fair	30+	Amenity	Medium
T20	*Acacia melanoxylon*	Blackwood	Indigenous	Mature	42	8x4	Fair	Fair	10-20	Ecological	Low
T21	*Crataegus sp.*	Hawthorn	Exotic	Semi-Mature	20	3x2	Fair	Fair	10-20	Low	Poor
T22	*Acacia melanoxylon*	Blackwood	Indigenous	Semi-Mature	21	6x4	Fair	Fair	5-10	Low	Low
T23	*Acacia melanoxylon*	Blackwood	Indigenous	Semi-Mature	21	6x2	Fair	Fair	5-10	Low	Low
S24	Stump	Stump	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.2 *Recorded Tree Data* **Combined DBH shown for multi-stemmed trees. All values for groups are averages*

Refer to Appendix A pages 24 – 28 for tree descriptors.

DBH = Diameter at Breast Height

H x S = Height x Spread

ULE = Useful Life Expectancy

2.3 PHOTOGRAPHS

Figure 2.3. *Tree 1*

Figure 2.4. *Trees 2*

Figure 2.5. *Tree 3*

Figure 2.6. *Trees 4G*

Figure 2.7. *Tree 5*

Figure 2.8. *Tree 6*

Figure 2.9. *Tree 7*

Figure 2.10. *Trees 7, 8 & 9*

Figure 2.11. *Tree 9*

PHOTOGRAPHS (CONTINUED)

Figure 2.12. *Trees 10G*

Figure 2.13. *The base of trees 10G*

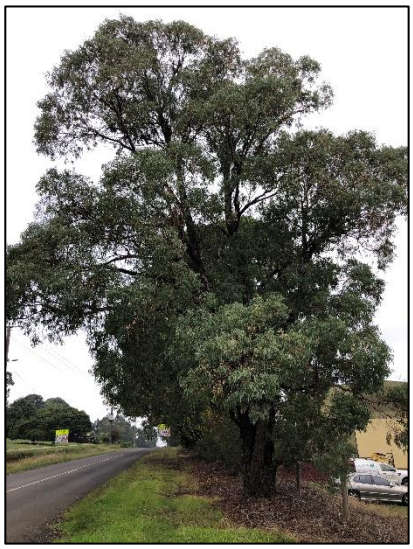

Figure 2.14. *Tree 11*

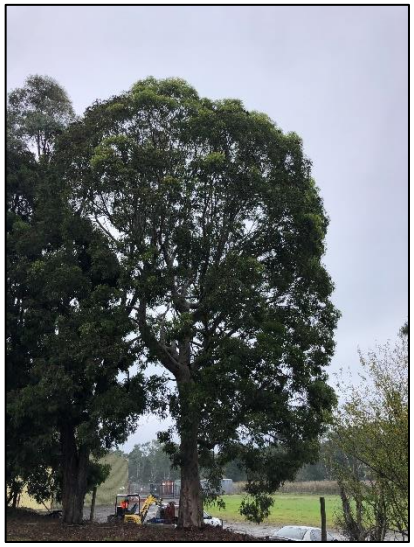

Figure 2.15. *Tree 12*

Figure 2.16. *Trees 19 – 12*

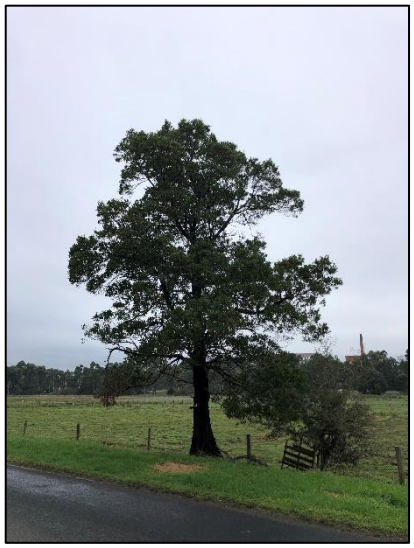

Figure 2.18. *Tree 20*

Figure 2.19. *Tree 21*

Figure 2.20. *Tree 23*

3. RETENTION VALUE

3.1 INTRODUCTION

3.1.1 All trees have been allocated a retention value (see table 3.1). The retention value of each tree is a recommendation of the level of suitability within the future development.

3.1.2 Many factors influence the retention value of a tree, with useful life expectancy (ULE) and significance being two major influencing factors.

Retention Value	Description	Tree ID	Number of trees
High	Highest retention score, Tree is of High Significance. ***Retain.***	N/A	0
Medium	Tree is suitable for retention and has a reasonable ULE. ***Retain if possible***.	**T1, T2, T3, T5, T6, T7, T8, T12, T14, T15, T16** & **T19**	12
Low	*Consider tree for removal. If site cannot accommodate tree requirements removal is recommended.* ***Consider for removal.***	**4G, T9, T11, T13, T17, T18, T20, T22** & **T23**	9
Poor	*Tree is unsuitable for retention, due to poor health and/or structure, weed classification, hazardous or other reasons.* ***Remove.***	**10G** & **T21**	2
Privately owned trees, i.e. trees on neighbouring properties or on nature strips will require protection. Unless the relevant tree owner/manager grants permission for its removal; ***Protect Tree****. Note statutory/planning controls also still apply.*			

Table 3.1. *Retention Value*

4. TREE PROTECTION ZONES

4.1 INTRODUCTION

4.1.1 When carrying out construction activities in the vicinity of trees, it is important to consider the protection requirements of the retained trees. The best principles for protecting trees on development sites are set out within the Australian Standard, AS 4970 – 2009, *Protection of Trees on Development Sites*.

4.2 DEFINITIONS

Tree Protection Zone (TPZ)

4.2.1 The TPZ is the area around the tree (both above and below ground) where all forms of construction activities (including excavation, fill and machine use) are excluded. The purpose of the TPZ is to protect the tree during the development process, allowing the tree to access the required resources in which it needs to remain viable.

4.2.2 The basic TPZ without alterations is simply a circle around the tree where the radius is measured from the centre of the stem at ground level. The radius of the TPZ is calculated for each tree by multiplying its DBH by 12 (TPZ = DBH x 12). Note; the minimum size of a TPZ is 2m and the maximum is 15m.

Structural Root Zone (SRZ)

4.2.3 The SRZ is an area calculated to determine the requirements of maintaining a trees stability. The SRZ is an area smaller in size than the TPZ and alone will not fulfil the requirements to maintain the viability of a tree. The true area occupied by the structural roots of a tree are influenced by many factors and may differ from the indicative SRZ. A thorough root investigation will provide much more accurate and detailed information and location on the extent of structural roots.

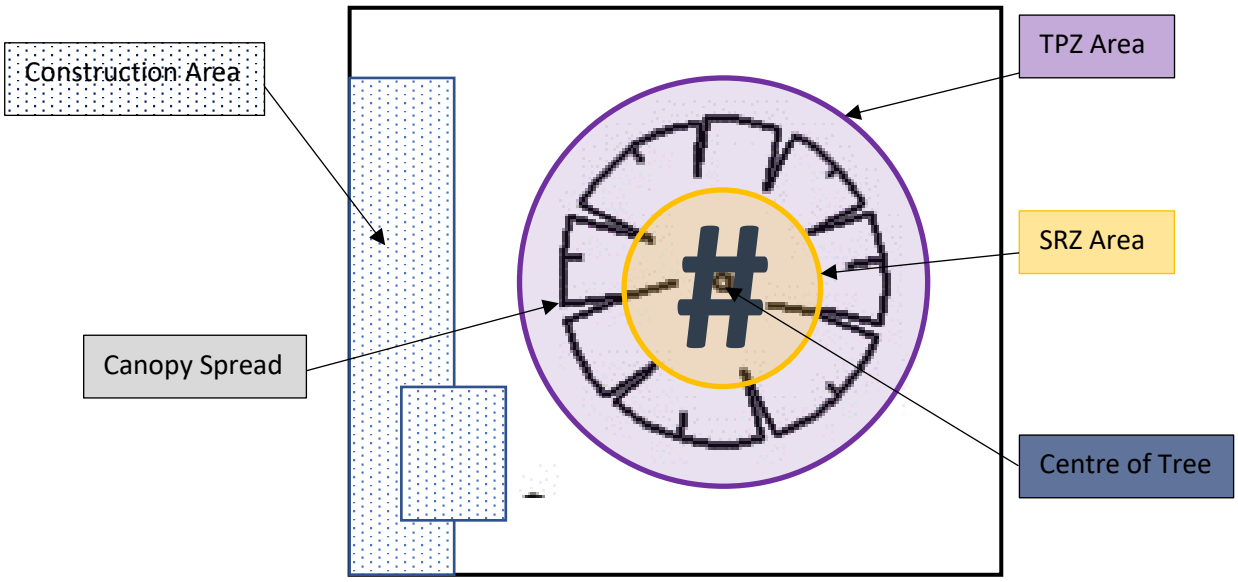

Figure 4.1. *TPZ/SRZ area with no encroachment*

4.3 Minor Encroachment

4.3.1 An encroachment of the TPZ is where the calculated TPZ is modified to allow permitted construction activities to occur. If the area proposed to be encroached is less than 10% of the total TPZ area, and is outside of the SRZ, it is considered a minor encroachment. A minor encroachment of the TPZ is generally acceptable, however individual tree requirements and site conditions will need to be considered to determine the overall impact on the tree.

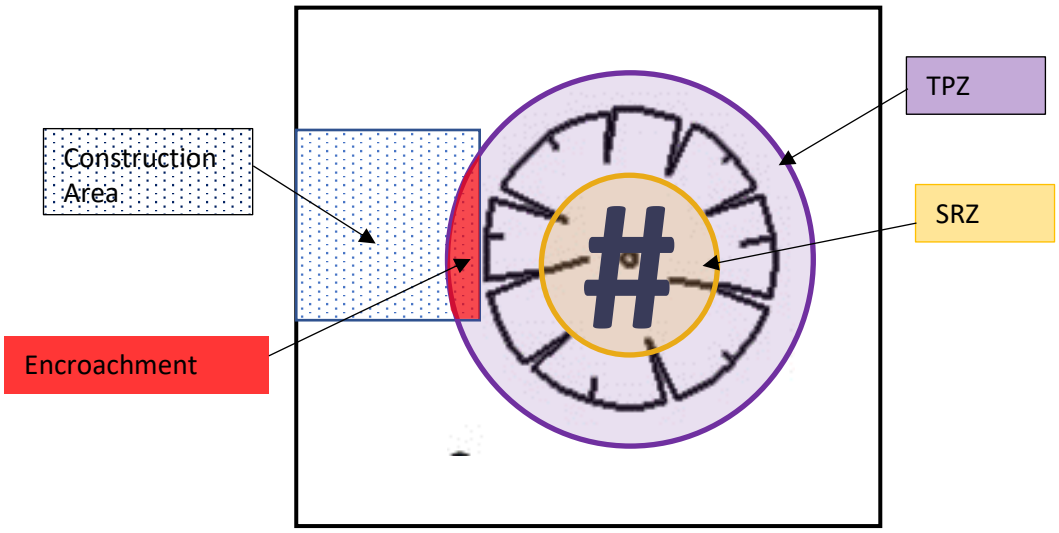

Figure 4.2. *Minor encroachment (<10% of TPZ area with no encroachment of the SRZ)*

4.4 Major Encroachment

4.4.1 When a proposed encroachment is greater than 10% of the TPZ or inside the SRZ, it is considered a major encroachment. When a major encroachment is proposed the consulting arborist must determine if the tree/s will remain viable. Considerations including; species, soil characteristics, age & vitality of the tree along with construction methods, will help determine if a tree/s will be tolerant.

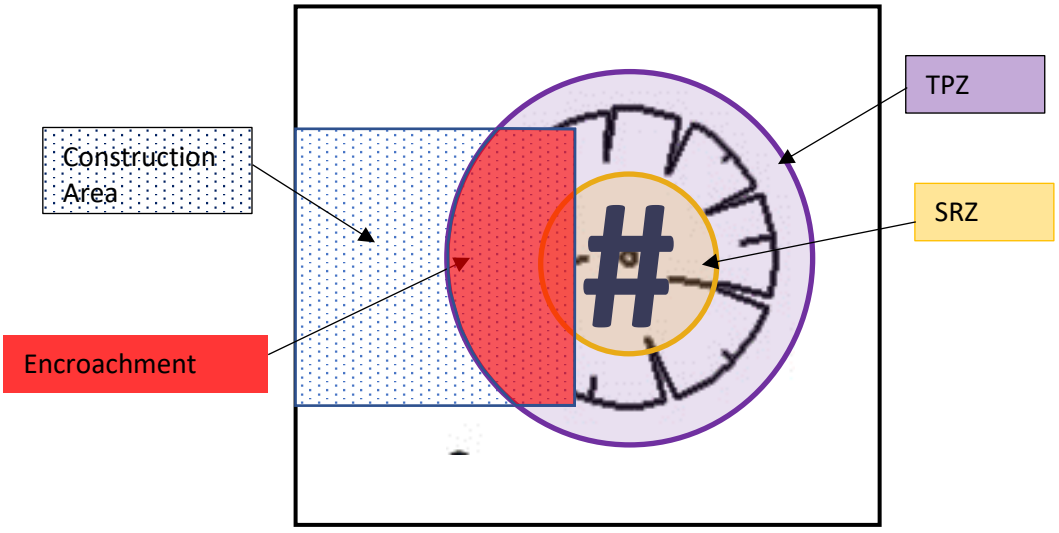

Figure 4.3. *Major encroachment (>10% of TPZ area with encroachment of the SRZ)*

4.5 TPZ/SRZ DIMENSIONS

4.5.1 The TPZ and SRZ dimensions have been calculated for all trees. All dimensions are provided in metres and are to be applied as a radius from the centre of the trunk at ground level. The TPZ/SRZ dimensions for groups of trees is the minimum distance required from each stem and must encompass all trees within the group.

Tree ID	TPZ (m)	SRZ (m)	TPZ area (m2)
T1	8.76	3.04	241.08
T2	2.52	1.80	19.95
T3	4.56	2.31	65.33
4G	4.56	2.31	65.33
T5	2.76	1.87	23.93
T6	10.32	3.26	334.59
T7	7.44	2.84	173.90
T8	5.16	2.43	83.65
T9	5.52	2.50	95.73
10G	2.00	1.56	12.57
T11	9.72	3.18	296.99
T12	7.68	2.88	185.30
T13	7.80	2.90	191.13
T14	11.52	3.41	416.92
T15	9.00	3.08	254.47
T16	7.68	2.88	185.30
T17	4.44	2.29	61.93
T18	4.32	2.26	58.63
T19	10.20	3.24	326.85
T20	5.04	2.41	79.80
T21	2.40	1.77	18.10
T22	2.52	1.80	19.95
T23	2.52	1.80	19.95
S24	N/A	N/A	N/A

Table 4.4. *TPZ & SRZ dimensions*

4.6 TREE PROTECTION ZONE FENCING & SIGNS

4.6.1 The perimeter of the calculated TPZ(s) should be clearly marked and identified to all personnel involved throughout the development. Generally, it is not possible to erect tree protection fencing on adjoining properties, however fencing will need to be erected for any portions of TPZ/s that occur within the subject site.

4.6.2 Ideally the tree protection fencing shall be a minimum of 1.5 meters high above ground level and be constructed of prefabricated wire mesh (or similar). However, in some situations less substantial fencing in the form of high visibility flagging, attached to timber/steel pickets, at height of 1.2m may be considered adequate, see figures 4.5 & 4.6. All TPZ areas need to be clearly identified by suitable signs. Signs should be attached to the TPZ fencing at intervals no less than 5m apart.

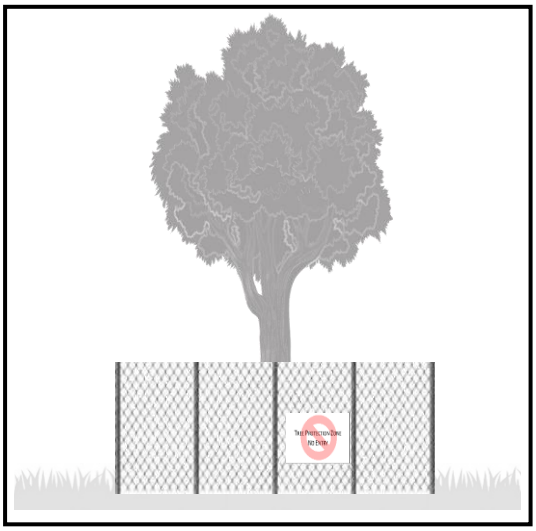

Figure 4.5. *Standard TPZ Sign*

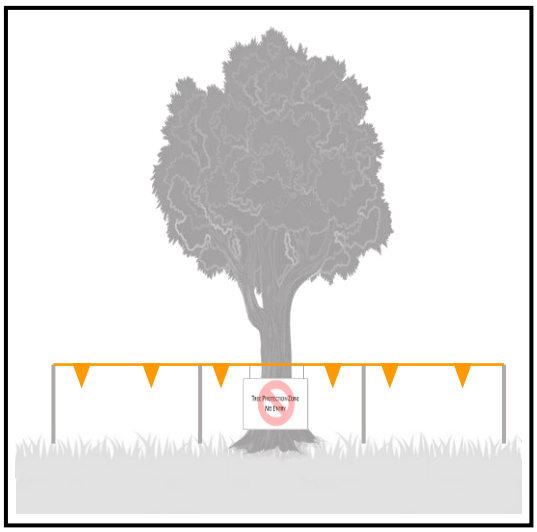

Figure 4.6 *Tree Protection Zone*

4.7 APPROVED WORK WITHIN TPZ(S)

4.7.1 No work may occur within the TPZ of any protected tree unless authorized by the project arborist and detailed within the Development Impact Assessment Report or Tree Protection Management Plan. If any construction personnel are unsure of the permitted work within a TPZ area, they should contact the project arborist prior to the commencement of work.

4.7.2 In areas where TPZ encroachment has been approved the TPZ fencing is permitted to be reduced by the minimum extent necessary to facilitate the approved work. In such situations the TPZ should be marked on the ground with paint and additional protection measures implemented. This may include ground protection, trunk and branch protection and direct supervision by the project arborist.

4.7.3 Any tree roots encountered <30mm dia. that require pruning, need to be done so by a suitably qualified person using sterilized and sharp cutting instruments. Pruning of tree roots >30mm dia. is not permitted unless directly authorized by the project arborist.

4.7.4 All exposed tree roots need to be covered with suitable topsoil within 48 hours of the excavation process. If this is unachievable temporary covering of exposed tree roots with moist material (i.e. hessian or similar) needs to be carried out until the excavation can be permanently backfilled.

4.8 Care of Protected Trees

4.8.1 The pruning of trees under protection shall be avoided where possible. The pruning of any tree under protection shall be undertaken by a suitably qualified arborist in accordance with Australian Standards – Pruning of Amenity Trees (AS 4373 - 2007). It is highly important to maintain and promote tree health whilst under protection.

4.8.2 The importance of the Tree Protection Program shall be clearly conveyed to all personnel involved throughout the development. Watering, mulching, weeding, fertilizing and pest treatment of protected trees shall continue for the duration of the project.

4.8.3 Roots discovered outside the TPZ(s) shall be severed cleanly with a disinfected hand saw and shall not be ripped, torn, pulled, or smashed. Any damage to the tree(s) under protection shall be immediately reported to the project arborist. This includes damage to; branches, trunks, roots or a noticeable change in appearance. Any confusion or uncertainty about the tree(s) or the protection program should be referred to the consulting arborist without hesitation.

4.9 Temporary Access For Vehicles & Machinery

4.9.1 In some situations, a TPZ may restrict the access of vehicles and machinery needed to perform construction activities both outside of the TPZ and approved activities within the TPZ. If temporary access is required additional control measures need to be implemented such as using marker paint to identify the unfenced TPZ and installing ground protection and branch/truck protection. Ground protection is often achieved by covering the ground surface with a 100mm layer of mulch with timber hoarding or rumble boards placed on top. For branch/trunk protection boards and padding should be attached by means of strapping and avoid damaging the bark.

4.10 Footing Holes for Fences

4.10.1 Post holes required to facilitate the construction of fences must be dug using hand tools when within the TPZ, avoiding damage to any roots >30mm. dia. relocation of footing holes may be necessary if such damage cannot be avoided. Any roots <30mm. dia. requiring pruning shall be done in a manner that encourages tree health. All roots cut shall be done using sterilized hand tools by a suitably experienced person.

4.11 Installation of Underground Services

4.11.1 Excavation inside a TPZ poses a significant level of risk to the tree's health and viability. If underground services must be installed inside a TPZ directional drilling at a minimum depth of 800mm (top of bore) is recommended.

4.11.2 If boring is unachievable manually excavated open trenches may also be approved and undertaken under supervision of the project arborist. If manual excavation under the supervision of the project arborist is advised. Roots critical to tree stability need to be identified and protected.

4.12 Other Restrictions

4.12.1 The base area of the TPZ(s) shall be unaltered by cut, fill, trenching, fertilizers, or liquid chemical overland flow except under the conditions set out in Construction within TPZs. Building materials or waste shall not be stored within the TPZ(s). An area as far away from the tree(s) as practical shall be selected for all long-term storage. Nothing shall be attached to any retained tree, including service wires, nails, screws, etc.

5. Development Impact Assessment

5.1 Proposed Design – Overall Site

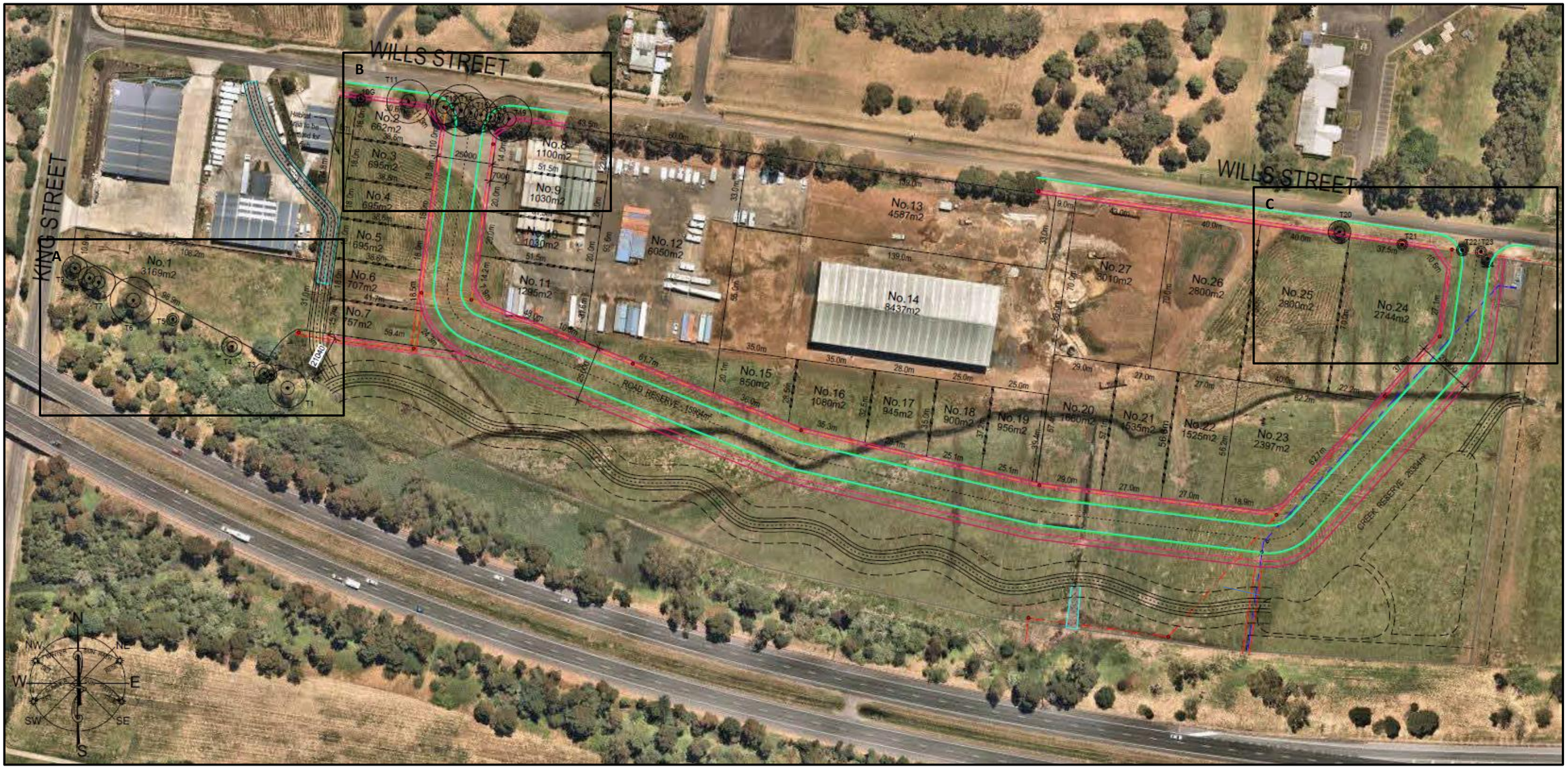

Figure 5.1. *Proposed Site Plan (Advantage All Development Group) with TPZ & SRZ drawn to scale*

5.2 PROPOSED DESIGN – ENLARGEMENT MAP A

Figure 5.2. *Proposed Site Plan (Advantage All Development Group) with TPZ & SRZ drawn to scale*

5.3 PROPOSED DESIGN – ENLARGEMENT MAP B

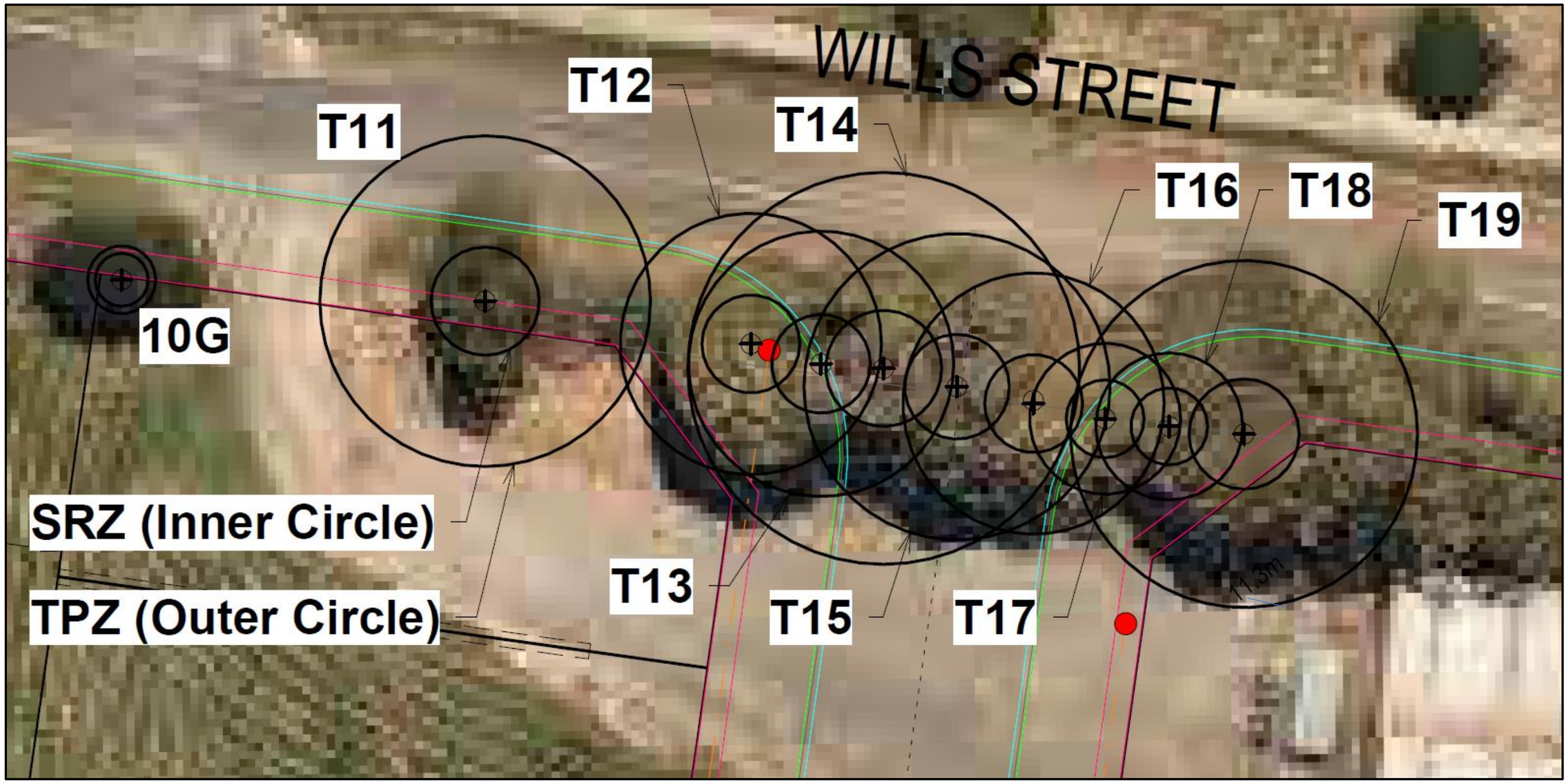

Figure 5.3. *Proposed Site Plan (Advantage All Development Group) with TPZ & SRZ drawn to scale*

5.4 Proposed Design – Enlargement Map C

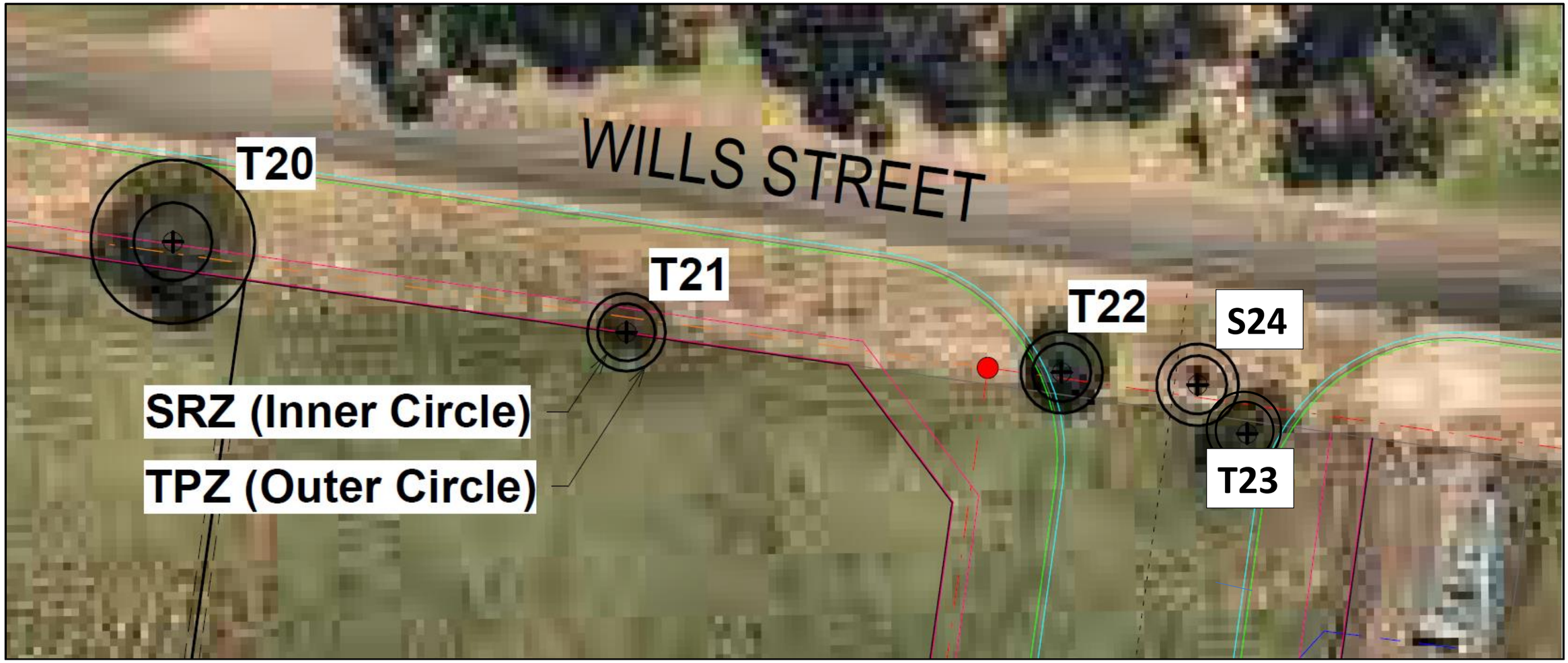

Figure 5.4. *Proposed Site Plan (Advantage All Development Group) with TPZ & SRZ drawn to scale*

5.5 DESIGN PROPOSAL & CONSIDERATIONS

5.5.1 Under the current design 15 – 70 Wills Street, Warragul is proposed to be developed into a new industrial estate. The majority of the site has previously been cleared. Refer to the Ecology Report (P. Kelly) for further information on native vegetation identified within the site.

5.5.2 At the current stage of the planning process, detailed construction drawings have not been prepared however in areas where construction is proposed (i.e. proposed road intersections & footpaths within the Wills Street road reserve) adjoining trees were assessed and their TPZ & SRZ dimensions have been added to the site plans.

5.5.3 All earthwork (incl. cut, fill, trenching, boring & compaction) required for the preparation of each lot and the installation of new underground services needs to remain outside of the all retained trees' SRZ and not occur within more than 10% of any individual TPZ. Likewise, all future buildings must remain outside of all retained trees' SRZ and must not occupy more than 10% of any individual TPZ, this includes all site cuts and retaining walls.

5.5.4 If the proposed design will result in a major encroachment (>10% loss of any individual TPZ or work within the SRZ) then detailed drawings depicting the extent of all forms of earthwork will need to be supplied and thoroughly reviewed by the consulting arborist.

5.6 DEVELOPMENT IMPACT SUMMARY

Description	Tree ID	# of Trees
Trees assessed	**1 – 24**	24
Trees proposed for removal	**T12 – T18, T21, T22, T23** & **S24**	11
Trees with a minor TPZ encroachment	N/A	0
Trees with a major TPZ encroachment	**T11, T19** & **T20**	3

Table 5.2. *Impact Summary*

5.7 TREES PROPOSED FOR REMOVAL

5.7.1 Under the current design 11 trees (ID **T12 – T18, T21, T22, T23** & **S24**) will require removal to facilitate construction.

5.7.2 Trees **T21**, **T22, T23** & **S24** are indigenous to the local area and may be subject to a native vegetation clearing permit, further advice from an ecologist should be sort prior to the removal of trees **T21**, **T22, T23** & **S24**.

5.7.3 Trees **T12 – T18** are non-indigenous trees within the Wills Street road reserve which have been planted for amenity purposes.

5.8 TREES WITH A MAJOR TPZ ENCROACHMENT

5.8.1 Under the current design the TPZ of 3 trees (ID **T11, T19** & **T20**) will be encroached by more than 10%, and/or including encroachment within the SRZ during the construction of the proposed new access roads and footpaths. This is considered a major encroachment (AS 4970 – 2009) and has the potential to significantly impact the health and structure of the trees.

5.8.2 To avoid tree decline, loss and death the following options must be considered:

- **Construction of new footpaths:** All new footpaths within the adjoining road reserves must be constructed on the existing grade where they occur within the TPZ of a retained tree. During the construction of all new footpaths all excavation (cut, fill & trenching) +/- 50mm must be supervised by a qualified arborist (minimum AQF level 5) where it occurs within the TPZ/SRZ of a retained tree.

- **Construction of new access roads:** During the construction of the new access road within the TPZ of **T19** all excavation (cut, fill, trenching, boring & compaction) +/- 50mm must be supervised by a qualified arborist (minimum AQF level 5).

- **All other earthwork:** If at any stage during the proposed development, earthwork (incl. cut, fill, trenching, boring, compaction etc.) is required within the TPZ of a retained tree, the project arborist must be consulted and detailed drawings must be provided detailing the full extent of the earthwork. Additional controls (i.e. arborist supervision, NDD, tree root exploration etc.) recommended by the project arborist must then be implemented during the construction process.

6. REPORT SUMMARY

6.1 REPORT SUMMARY

6.1.1 Development of the land at 15 – 70 Wills Street, Warragul is proposed. The proposed development will include the subdivision of the site into a new industrial estate.

6.1.2 24 trees/groups of trees (ID **1** – **24**) located on adjoining properties and nature-strips were assessed.

6.1.3 Under the current design 11 trees (ID **T12 – T18, T21, T22, T23** & **S24**) will require removal to facilitate construction. Trees **T21**, **T22, T23** & **S24** are indigenous to the local area and may be subject to a native vegetation clearing permit, further advice from an ecologist should be sort prior to the removal of trees **T21**, **T22, T23** & **S24**. Trees **T12 – T18** are non-indigenous trees within the Wills Street road reserve which have been planted for amenity purposes.

6.1.4 All other off-site trees and additional trees within the Wills Street road reserve are proposed to be retained within the current design.

6.1.5 All retained trees will require protection during the development construction phase. This is best achieved by the establishment of tree protection zones (TPZ).

6.1.6 Under the current design the TPZ of 3 trees (ID **T11, T19** & **T20**) will be encroached by more than 10%, and/or including encroachment within the SRZ during the construction of the proposed new access roads and footpaths. This is considered a major encroachment (AS 4970 – 2009) and has the potential to significantly impact the health and structure of these trees. Additional controls and tree protection measures (see 5.9.2) must be implemented during the development process to ensure these trees remain viable.

7. REFERENCES

Nearmap (2021) Available at: www.nearmap.com [Accessed 20 December. 2021]

Planning Schemes Online (2020). Particular Provisions - Clause 52.17 - Native Vegetation.

Proofsafe (2021) Available at: www. proofsafe.com.au/tpz_incursion_calculator [Accessed 19 August. 2021]

Arboriculture Australia, MIS 313 Tree Health & Maintenance, July 2020

Standards Australia 2009, Protection of trees on development sites, AS 4970:2009

Standards Australia 2007, Pruning of Amenity Trees, AS 4373:2007

Appendix A TREE DESCRIPTORS

A.A TREE ID

A.A.A **For trees assessed individually** a tree number is allocated for quick referencing and corresponds to the site map.

A.A.B **For populations of trees assessed collectively;** '**G**' following the tree ID indicates the assessment of a group of trees.

A.B TREE NAME

A.B.A **Botanical name** is the name given to the tree which is universally recognised and expressed in Latin, consisting of both the Genus and Species name.

A.B.B **Common name** is the most common informal name the tree is referred to in a regional context.

A.C TREE DIMENSIONS

A.C.A Tree Dimensions calculated by the Arborist during site assessment.

D.B.H	Diameter at Breast Height. Measured 1.4 Meters above the ground.
D.A.B	Diameter at Base. Measured immediately above root buttress/flare.
Height	The estimated height of the tree in meters.
Spread	A measurement of the tree canopy in meters. Measured on the ground by walking out the distance along the widest axis under the canopy.

Tree Dimensions

A.D ORIGIN

A.D.A The recorded/accepted natural origin of the tree.

I - *Indigenous*	The tree is indigenous to the area and growing as a result of natural regeneration (i.e. not planted).
V/N - *Vic Native*	The tree is native to Victoria. However, it is outside of its naturally occurring range or has been planted.
N - *Native*	The tree is of Australian origin, but not naturally occurring within Victoria
E - *Exotic*	The tree is not of Australian origin.

Tree Origin

A.E AGE

A.E.A The estimated age of the tree as determined by the Arborist

J - *Juvenile*	A recently formed, emerging tree or sapling.
Y - Young	A young tree that is dynamic and actively growing.
S/M - *Semi-mature*	A tree which is established within its environment and continuing to actively grow towards its maximum size.
M - *Mature*	A tree which has reached its expected growing potential for the species and location and has slowed in growth.
S - *Senescent*	A tree which has reached full maturity, is not continuing to actively grow and may be in decline.
D - Dead	The tree is dead.

Tree Age

A.F HEALTH

A.F.A The overall health of the tree as observed by the Arborist.

Good	The tree displays a full canopy containing little or no dead wood, with good colour and shows indicators of good compartmentalisation of wounds (if present). The tree shows little or no signs of the presence of pathogens. The tree shows no visible sign of decay and no visible signs of root damage.
Fair	The tree is showing a combination of the following symptoms of fair health; signs of deadwood of up to 20%, minor presence of pathogens, small amounts of epicormic growth. Less than a full canopy with some discolouration in the leaves.
Fair - Poor	The Tree displays intermediate characteristics of both *Fair* & *Poor*
Poor	The tree is showing a combination of the following symptoms; up to 50% die back in the canopy with high quantities of deadwood. Discolouration of leaves. Large amounts of epicormic growth. Visible signs of pathogens causing decay and/or other damage.
Significant Decline	The tree is likely to be showing most if not all of the following symptoms; Canopy die back >75%. Extensive deadwood throughout the entire tree. Severe attack from pathogens. Large/extensive decay within root zone, trunk and branches.
Dead	The Tree is dead.

Tree Health

A.G STRUCTURE

A.G.A The structural assessment of the tree as determined by the Arborist by visual ground-based observations. (Unless otherwise specified)

Good	Branch unions sound, little or no signs of decay within tree. Form is promoting good structural growth. Scaffold limbs and leaders display good taper.
Good-Fair	The Tree displays intermediate characteristics of both *Good* & *Fair*
Fair	Shows some evidence of structural defects including; rubbing branches, branches growing in an overextended lateral direction, minor cavities in trunk and branches, some evidence of decay, small amounts of damage to roots and missing bark.
Fair-Poor	The Tree displays intermediate characteristics of both *Fair* & *Poor*
Poor	Movement of root plate may be visible. Vertical cracks present. Large amounts of decay are observed. Large hollows or cavities are obvious. Included bark and poor branch unions present with co-dominant stems. Large epicormic branches.
Immediate Hazardous	The tree poses an immediate risk to people and property and requires immediate attention (e.g. isolation, remedial pruning or removal)
Dead	Tree is dead.

Tree Structure

A.H USEFUL LIFE EXPECTANCY

A.H.A U.L.E (Useful Life Expectancy). The estimated time in which the tree will remain within the landscape with limited additional care and with a satisfactory level of risk.

30+ Years	Very Long
20-30 Years	Long
10-20 Years	Medium
5-10 Years	Short-Medium
<5 Years	Short
0 Years	Tree is dead, in severe decline, hazardous, impacting a fixed asset, presenting an obstruction, posing weed potential or a combination of these characteristics, removal may be necessary

Useful Life Expectancy

A.I SIGNIFICANCE –

A.I.A Significance can be described in many contexts including amenity, landscape, ornamental, heritage and ecological.

A.I.B The table below details the significance criteria used to determine the significance of the assessed each tree.

Descriptor	Category	Criteria
Low (Lo)	**(All)**	The tree does not meet the criteria of any of the categories listed below. The tree is considered to have a low value in the context of all other significance categories.
Amenity (A)	**Amenity**	The tree has a medium amenity value based on its functionality. Examples include (but not limited to); the tree provides important shade, wind suppression, water management and/or erosion management.
Ecological (E)	**Ecological**	The tree has a medium ecological value due to its contribution to native flora and fauna (in a local, regional, state or national context). Examples include (but not limited to); the tree forms part of remnant vegetation which is now restricted and/or threatened within the area. Tree provides significant amounts of habitat for local Fauna. Tree is protected under local, state or national agreements/Acts.
Heritage (H)	**Heritage**	The tree is protected by local, state or national heritage classification.
Landscape (L)	**Landscape**	The tree has a medium landscape value due to its contribution to the local landscape. Examples include (but not limited to); the tree is of exceptional size and/or age. Tree forms a focal point within the local landscape. Tree is part of a uniform and collective planting iconic to the local area.
Ornamental (O)	**Ornamental**	The tree has a medium ornamental value due to its ornamental or botanical features. Examples include (but not limited to); the tree is of exceptional size and/or age for its species, is considered to be uncommon within cultivation or of particular importance within the wider horticultural community, the tree may contribute to the heritage of the site although not officially recognised.
High (Hi)	**(All)**	The tree has a high value in one or more of the above categories or a medium value in three (3) or more of the above categories.

Significance

A.J RETENTION VALUE

A.J.A A value (see below) given to the tree that considers all the above information. It provides the necessary guide for which trees are suitable for retention and which trees are recommended for removal with consideration to the current and future intended land use.

High	*Highest retention score, Tree is of High Significance.* ***Retain.***
Medium	*Tree is suitable for retention and has a reasonable ULE.* ***Retain if possible****.*
Low	*Consider tree for removal. If site cannot accommodate tree requirements removal is recommended.* ***Consider for removal.***
Poor	*Tree is unsuitable for retention, due to poor health and/or structure, weed classification, hazardous or other reasons.* ***Remove.***
*****	*Privately owned trees, i.e. trees on neighbouring properties or on nature strips, generally require protection '********' following the retention value indicates that the tree is privately owned. Unless the relevant tree owner/manager grants permission for its removal;* ***Protect Tree****. Note statutory/planning controls still apply.*

Retention Value

Appendix B ASSUMPTIONS & LIMITATIONS

B.A.A Reports are prepared assuming the person making the request has good title and ownership, legitimacy of purpose, the authority to grant access and/or engage service.

B.A.B This report is prepared with reasonable care. To the extent permitted by law, the author accepts no responsibility for any loss or damage sustained by a recipient as a result of acting on its recommendations.

B.A.C The author can neither guarantee nor be responsible for the accuracy of information in this report provided by others.

B.A.D Information provided in a verbal or written report covers only those items examined. It reflects their condition at the time of inspection only.

B.A.E Unless otherwise specified, inspection is limited to visual inspection from ground level without dissection, excavation, drilling, physical or nutritional analysis or quantification of structural integrity. No responsibility is accepted for the consequences of internal or sub-surface defects which present no discernible external symptoms.

B.A.F The report shall not be used for any other purpose or conveyed externally in whole, part or meaning without the prior written consent of the author.

B.A.G Sketches, diagrams, graphs and photographs used as visual aids are not necessarily to scale.

B.A.H Unauthorised alteration or separate use of any part of the report is prohibited and invalidates the whole report.

B.A.I The author accepts no responsibility for the consequences of work performed outside specification, by inappropriately qualified staff or without consultant supervision where it has been recommended.

B.A.J The conclusions reached, and recommendations made do not imply that plants, built landscape or structures will withstand future adverse natural or man-made conditions.

B.A.K There is no warranty or guarantee that problems, deficiencies, faults or failures of plants or property inspected may not arise in the future. Regular re-inspection will be required to identify emerging disorders