



Arboricultural Assessment and Report

46 Tennyson Street,
Elwood

19 January 2022

Tree Logic Ref. 012016

Prepared for Tom Temac- City of Port Phillip
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Summary

Treelogic was engaged by City of Port Phillip to undertake an arboricultural assessment to review existing trees on site.

The primary purpose of the assessment was to improve City of Port Phillip's understanding of the development constraints and opportunities of the site in relation to the existing site trees. The current status, condition and arboricultural value of the trees located within site was determined.

Fourteen (14) surveyed trees were assigned a number, their condition assessed, and their characteristics recorded. Of these ten were site trees, one a street tree and the remainder were trees on neighbouring property. Other vegetation on site consisted of garden plantings of minimal arboricultural significance.

The subject site is not covered by any specific tree regulations. The City of Port Phillip Local Law 1 (Community Amenity) requires a planning permit for pruning or removal of a significant tree.

Two of the assessed trees are considered to be significant trees under the local law. These are Tree #8 a Chinese Cedar (*Cedrella sinensis*) which was in declining condition and Tree #14 the neighbours Silver Banksia (*Banksia marginata*); which would need physical confirmation of its size.

Significant Trees would need a permit to prune (including root pruning) or remove and may impact future use of site if sold.

An assessment of the trees has been given based on their 'arboricultural value'.

The Australian Standard AS4970-2009 Protection of Trees on Development Sites has been utilized to develop tree protection zones and general recommendations are made in relation to proposed works within this zone.



Image 1 (Left) and **Image 2** (Above) show Chinese Cedar a Significant Tree due to size under Local Law.

Image 3 (Right) image taken over back fence showing neighbours Silver Banksia, with the largest central tree (only) surveyed and potentially a Significant Tree.



1 Method

A site inspection was undertaken in the early evening of Thursday 13 January 2022. The assessment was undertaken utilising contemporary arboricultural practices and consisted of a visual, ground-based inspection of external and above-ground tree parts. The trees were not climbed, and no samples of the tree or site soil were taken.

The basic visual assessment is a ground-based inspection of the tree crown, trunk, trunk flare, above-ground roots, and site conditions. The assessment identifies defects that could be visually observed. It may include the use of simple tools to measure and gain additional information about the tree or defects. Tools may include a clinometer, tape measure, binoculars, trowel or sounding hammer.

All surveyed trees were included in the assessment.

Observations were made of the assessed trees to determine the species, age category, and condition with measurements given in ranges and taken to establish crown height (measured with a height meter), crown width (paced) and trunk dimensions measured.

Where neighbouring trees could not be accessed, and vision of their trunks was blocked by tall solid fencing estimates have been applied.

Assessment details of individual trees are listed in Appendix 1. A copy of the tree location plan showing tree numbers as discussed in the report are shown on Feature & Level Survey in Appendix 2. Descriptors used in the assessment can be seen in Appendix 3.

Photographs of the trees and site were taken for reference and inclusion in the report.

Each of the assessed trees was attributed an 'Arboricultural Rating'. The arboricultural rating correlates the combination of tree condition factors (health and structure) with tree amenity value. It should be noted that the arboricultural rating is different to the conservation/ecological values placed on trees by other professions. Definitions of arboricultural ratings can be seen in Appendix 3 and are shown on plan in Appendix 2.

The Australian Standard, AS 4970-2009 *Protection of trees on development sites*, has been used as a guide in the allocation of TPZs for the assessed trees. This method provides a TPZ that addresses both the stability and growing requirements of a tree. TPZ distances are measured as a radius, from the centre of the trunk at (or near) ground level. TPZ measurements for all assessed trees are provided in Appendix 1.

Documents viewed:

Feature & Level Survey- 46 Tennyson Street, Elwood- by Veris dated 25/03/2020.

City of Port Phillip Local Law 1 (Community Amenity) 2013 via portphillip.vic.gov.au/local-laws

Australian Standard AS4970-2009 *Protection of Trees on Development Sites*

2 Observations

The nominated site was on the north-eastern side of Tennyson Street and otherwise surrounded by residential properties. The subject site falls within the Port Phillip Planning Scheme and is zoned NRZ6 Neighbourhood Residential Zone. Neighbourhood character objectives is to maintain the distinctive garden suburban character including larger lot sizes with generous landscaped front and side setbacks. It is a level site of approximately 696 square meters.

Fourteen (14) trees were formally assessed. Ten trees (Trees #3, #4, #5, #6, #8, #9, #10, #11, #12 and #13) were within the site. Tree #1 was a street tree in Tennyson Street. Trees #2 and #7 were within 44 Tennyson Street, Elwood and Tree #14 was to the east of site growing within 17 Wimbledon Avenue, Elwood.

Two of the assessed trees were of Australian origin (Trees #13 and #14), with the neighbouring *Banksia marginata* Silver Banksia (Tree #14) a species indigenous to the region and potentially remnant vegetation.

The remainder of the trees were exotic in origin. Due to the size and distribution of the trees within the site they all appear to have been planted for shading and amenity purposes.

The largest tree on site was a declining Chinese Cedar (Tree #8), of sufficient size to require a permit to remove. The neighbouring Silver Banksia (Tree #14) and the street tree a Golden Elm (Tree #1) are the most significant tree associated with this site and would require due consideration were the site use to change.

Most (8) of the trees were considered of fair (or typical) health for prevailing conditions (Trees #2, #3, #4, #6, #7, #9 #10 and #14). While the remainder were less than typical (fair to poor) due mostly to reduced vigour.

Two of the assessed trees were considered fair or with typical structure for their age and species (Trees #2 and #3). Tree structure was otherwise predominantly fair to poor due to weak branch attachment angles or in case of the Chinese Cedar (Tree #8) due to decay within basal unions.

Each tree was attributed an arboricultural rating which relates to the combination of tree factors, including health and structure (arboricultural merit), and also conveys an amenity value. Amenity relates to the trees biological, functional and aesthetic characteristics within an urban landscape context. Retention value is directly related to this rating system. A breakdown of the arboricultural ratings attributed to the trees assessed within the subject site indicated that there were no trees of such prominence and standing that they met the criteria for a High-rated tree.

- Eight trees were attributed a Moderate arboricultural rating. Trees were of moderate quality, in fair or typical condition for their species under the prevailing site conditions. Some of these trees have a condition, and or structural problem that could respond to arboricultural treatment. Retention of these trees is generally desirable. To aid gradation within this category A has a high retention value than B, as B does to C.
 - The Silver Banksia (Tree #14) within the rear neighbouring property was considered to warrant a Moderate (A) arboricultural rating, due to its potential longevity.
 - The Golden Elm on Tennyson Street (Tree #1) was attributed an arboricultural rating of Moderate (B) due to it forming part of the 'avenue planting' and thus contribution to landscape character; but was down rated from a Mod (A) due to dieback of its crown.

- Six trees (Tree #2, #3, #8, #9, #10 and #12) were attributed an arboricultural rating of Moderate (C).
- The five Low rated trees (Trees #5, #6, #7, #11, #13) were due to their reduced size and limited impact on landscape character.
- The Poor rated Chinese Hawthorn (*Photinia serratifolia*) was merely a multi-stemmed shrub with little influence on landscape character.

3 Tree protection zones

The tree protection zones (TPZs) provided for each tree in the Tree Assessment Table in Appendix 1 are calculated using the formula provided in the Australian Standard AS4970 where the radial TPZ = trunk diameter (DBH) measured at 1.4m above grade and multiplied by 12. TPZ distances are a radius from the centre of the trunk at (or near) ground level. A TPZ should not be less than 2 metres nor greater than 15 metres.

The TPZ forms an area around a tree or group of trees that addresses both the stability and growing requirements of a tree.

While TPZs are shown as circular the distribution of the root system is greatly influenced by soil conditions, slope, existing structures and obstructions to growth.

The structural root zone (SRZ) provided for each tree has also been calculated using the method provided in AS4970. The SRZ is the area in which the larger woody roots required for tree stability are found close to the trunk. The SRZ is the minimum area recommended to maintain tree stability but does not reflect the area required to sustain tree health. Other than some minor surface-oriented activity, works should be excluded from within the SRZ radius as tree stability could be compromised.

4 Tree permit requirements

The site falls under the Port Phillip Planning Scheme and is zoned NRZ5 Neighbourhood Residential Zone. Neighbourhood character objectives are stated as "To maintain the distinctive garden suburban character including larger lot sizes with generous landscaped front and side setbacks."

The subject site is not covered by any tree specific regulations, and 52.17 Native Vegetation Protection does not apply as site is less 4000m², and the site trees all appear to have been planted

The City of Port Phillip Local Law 1 (Community Amenity) would apply if sold as private land, and a permit would then be required to prune or remove significant trees.

Definition of a Significant Tree:

A Significant Tree means a tree or palm on private land:

With a trunk circumference of 150 centimetres or greater measured 1 metre from the base;

A multi-stemmed tree where the circumference of its exterior stems equals or is greater than 1.5 metres when measured 1 metre from its base; *Noting that a diameter of 48 cm ~ 150cm.*

A permit to prune or remove would apply to the Chinese Cedar (Tree #8) in the front setback. It may also apply to the pruning the Silver Banksia in the adjoining rear property, but verification of its circumference at 1m above ground level is required.

A Significant Tree Permit is required for private land in addition to any planning permit required by the Port Phillip Planning Scheme.

5 Discussion

Assuming the site would be sold as private land, a Local Law permit to prune or remove the Chinese Cedar would be required.

According to the Local Law 1 "The granting of such a permit must have regard to section 4 under 44. Significant Trees. It should be noted that in deciding whether to grant a permit under sub-clause (1), Council must have regard to:

- (a) whether it is necessary to obtain an arborist's report; (this report covers that requirement)
- (b) whether the tree is included on any register; (it does not appear on National Trust register)
- (c) the reasons for the request;
- (d) the impact on the amenity and the safety of the area;
- (e) any proposed replacement plantings; and
- (f) any other matter considered relevant by Council."

With any development of the site, it is required to ensure encroachment of the TPZ of the footpath tree and neighbouring trees is less than 10% and that trees are protected from inadvertent damage including soil contamination or compaction. Trees #2 and #7 encroached the site by more than 10% and a set-back to ensure their SRZ were not encroached would be required.

Very careful consideration of existing structures such as the old brick wall would be necessary to ensure structural roots of the street tree (Tree #1) and the neighbours Crepe Myrtle (Tree #2) were not damaged by replacement or upgrading of this structure.

As the Silver Banksia (Tree #14) is overhanging the site it needs to be determined if the branches initiate from the larger potentially Significant Tree or the smaller tree closer to the boundary to confirm whether a Local law permit would be required.

6 Conclusions

Fourteen (14) trees were formally assessed in association with this the site.

With sites to be considered for development or change of use, the trees with highest arboricultural rating should be considered for retention. In this instance the trees with the highest arboricultural rating were the Moderate A rated Silver Banksia in the neighbouring property (17 Wimbledon Avenue, Elwood) and the Golden Elm street tree.

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

A permit to prune or remove applies to significant trees under the Port Phillip Local Law 1 and would apply to the Chinese Cedar in the front setback, and with confirmation potentially the neighbours Silver Banksia.

A significant tree permit is required for private land in addition to any planning permit required by the Port Phillip Planning Scheme.

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

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

Signed



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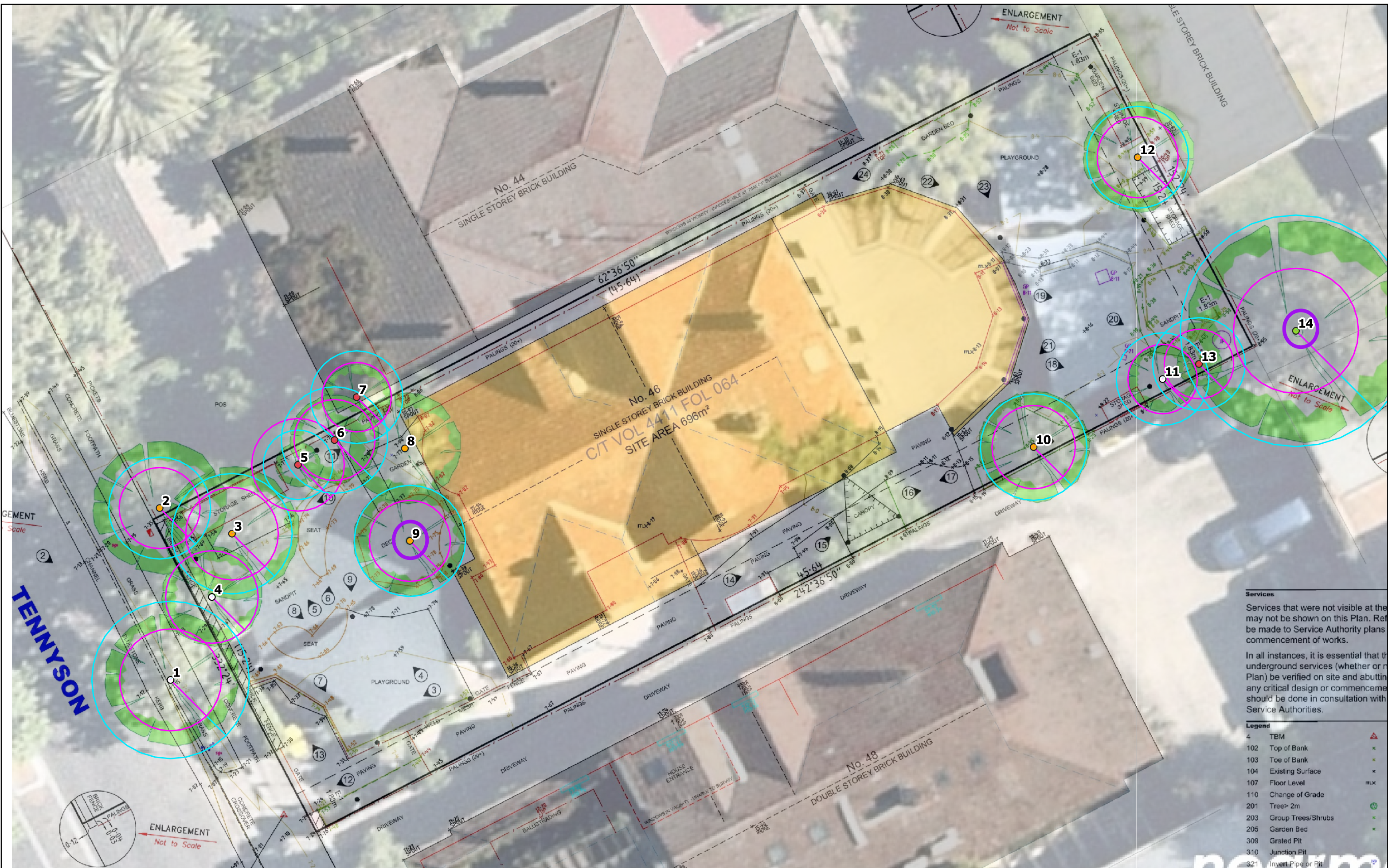
Appendix 1: Tree Data- 46 Tennyson Street, Elwood

Data as at 13 January 2022

Refer to Appendix 3 for Descriptors

| ID | Species- Common Name | Age_class | Origin - type | DBH (cm) | Basal ø (cm) | H X W (m) | Health | Structure | Arb, rating | ULE (yrs) | Comments | TPZ rad (m) | SRZ rad (m) |
|----|---|--------------|---------------------|-----------------|-----------------|--------------|---------------|-----------|----------------|--------------|--|----------------|----------------|
| 1 | Fraxinus excelsior 'Aurea'- Golden Elm | Early-mature | Exotic deciduous | 28 | 37 | 6 X 6 | Fair- poor | Fair-poor | Mod.B | 21-40 y | Street Tree. Dieback | | |
| 2 | Lagerstroemia indica- Crepe Myrtle | Early-mature | Exotic deciduous | 13,12 | 22 | 5 X 5 | Fair | Fair | Mod.C | 21-40 y | Neighbours | 2.2 | 1.8 |
| 3 | Betula pendula- Silver Birch | Semi-mature | Exotic deciduous | 22 | 30 | 7 X 7 | Fair | Fair | Mod.C | 11-20 y | Growing within restricted area in pavement. Cracking evident | 2.6 | 2 |
| 4 | Photinia serratifolia- Chinese Hawthorn | Semi-mature | Exotic evergreen | 6,5,5,5,4 | 30 | 3 X 2 | Fair | Fair-poor | Poor | 6-10 y | Multi- stemmed from base | 2 | 2 |
| 5 | Camellia japonica 'Cvr'- Camellia | Semi-mature | Exotic evergreen | 5,4,4,4 | 20 | 3 X 3 | Fair- poor | Fair-poor | Low | 11-20 y | Foliage cleared to fence height | 1.5 | 2 |
| 6 | Pittosporum eugenioides 'Variegatum'- Variegated Tarata | Semi-mature | Exotic evergreen | 15,8,7,6, 6 | 22 | 5 X 4 | Fair | Fair-poor | Low | 6-10 y | Close to paving | 2.3 | 1.8 |
| 7 | Magnolia 'Cvr'- Magnolia | Semi-mature | Exotic evergreen | 8,6,5 | 15 | 3 X 4 | Fair | Fair-poor | Low | 11-20 y | Neighbours | 2 | 1.5 |
| 8 | Cedrella sinensis- Chinese Cedar | Early-mature | Exotic deciduous | 15,20,18 @1m | 60 | 7 X 5 | Fair- poor | Fair-poor | Mod.C | 6-10 y | Suckering. Congested union. Basal decay | | |
| 9 | Betula pendula- Silver Birch | Early-mature | Exotic deciduous | 20 | 22 | 2 X 5 | Fair | Fair-poor | Mod.C | 11-20 y | Lopped and being maintained at 2m tall | 2.4 | 1.8 |
| 11 | Acer palmatum 'Cvr'- Cut-leaf Maple | Semi-mature | Exotic deciduous | 10,7 | 14 | 4 X 3 | Fair- poor | Fair-poor | Low | 21-40 y | | 2 | 1.5 |

| ID | Species- Common Name | Age_class | Origin - type | DBH (cm) | Basal ø (cm) | H X W (m) | Health | Structure | Arb, rating | ULE (yrs) | Comments | TPZ rad (m) | SRZ rad (m) |
|----|---|--------------|---------------------|-------------|-----------------|--------------|---------------|-----------|----------------|--------------|---|----------------|----------------|
| 10 | Pyrus calleryana 'Bradford'- Bradford Pear | Semi-mature | Exotic deciduous | 17,8 | 23 | 8 X 5 | Fair | Fair-poor | Mod.C | 21-40 y | Included unions. Known to be brittle | 2.3 | 1.8 |
| 12 | Jacaranda mimosifolia- Jacaranda | Semi-mature | Exotic deciduous | 18 | 22 | 6 X 4 | Fair- poor | Fair-poor | Mod.C | 21-40 y | Co-dominant leaders at 2m. Growing within decking | 2.2 | 1.8 |
| 13 | Leptospermum sp.- Tea-tree | Semi-mature | Victorian native | 12 | 15 | 4 X 1 | Fair- poor | Fair-poor | Low | 6-10 y | Suppressed by climber | 2 | 1.5 |
| 14 | Banksia marginata- Silver Banksia | Early-mature | Indigenous | 42 est. | 60 est. | 6 X 8 | Fair | Fair-poor | Mod.A | >40 | Neighbours. Tree point is largest of 3 trees. | 5 | 2.7 |



APPENDIX 2 — TREE LOCATIONS AND PROTECTION ZONES

PROJECT
46 Tennyson Street, Elwood

TL REF. 012016 **MAP NO.** 1/1

DATE 2022-01-18

CLIENT City of Port Phillip

DATA SOURCES NearMaps Image 24/12/21 and Feature and Level Survey 27/11/21 by Veris

LEGEND

Arb Rating

- Mod-A
- Mod-C

Mod-B

Low

Tree Protection Zones

- TPZ
- SRZ

Significant Tree under Local Law

TREE LOCATION DISCLAIMER
Tree locations are approximate

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



Services

Services that were not visible at the time of the survey may not be shown on this Plan. Refer to the relevant Service Authority plans for more information.

In all instances, it is essential that the location of underground services (whether or not shown on this Plan) be verified on site and that any critical design or commencement of works should be done in consultation with the relevant Service Authorities.

| Legend | |
|--------|--------------------|
| 4 | TBM |
| 102 | Top of Bank |
| 103 | Toe of Bank |
| 104 | Existing Surface |
| 107 | Floor Level |
| 110 | Change of Grade |
| 201 | Tree > 2m |
| 203 | Group Trees/Shrubs |
| 205 | Garden Bed |
| 309 | Grated Pit |
| 310 | Junction Pit |
| 321 | Invert Pipe or Pit |

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Tree logic
plan, manage, protect

Arboricultural Descriptors (February 2019)

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

1. Tree Condition

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

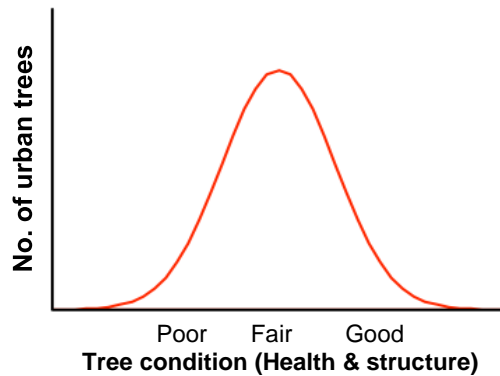


Diagram 1: Indicative normal distribution curve for tree condition

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

2. Tree Name

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

3. Tree Type

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

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

4. Height and Width

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

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

5. Trunk diameters

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

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

Diameter at Breast Height (DBH)

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

Basal trunk diameter

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

6. Health

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

| Category | Vigour, Extension growth | Decline symptoms, Deadwood, Dieback | Foliage density, colour, size, intactness | Pests and or disease |
|---------------------|---|---|--|---------------------------------|
| Good | Above typical. Excellent. Full canopy density | Negligible | Better than typical | Negligible |
| Fair | Typical vigour. >80% canopy density | Minor or expected. Little or no dead wood | Typical. Minor deficiencies or defects could be present. | Minor, within damage thresholds |
| Fair to Poor | Below typical - low vigour | More than typical. Small sub-branch dieback | Exhibiting deficiencies. Could be thinning, or smaller | Exceeds damage thresholds |

| Category | Vigour, Extension growth | Decline symptoms, Deadwood, Dieback | Foliage density, colour, size, intactness | Pests and or disease |
|-------------|--------------------------|---|---|-------------------------------------|
| Poor | Minimal - declining | Excessive, large and/or prominent amount & size of dead wood. Significant dieback | Exhibiting severe deficiencies. Thinning foliage, generally smaller or deformed | Extreme and contributing to decline |
| Dead | N/A | N/A | N/A | N/A |

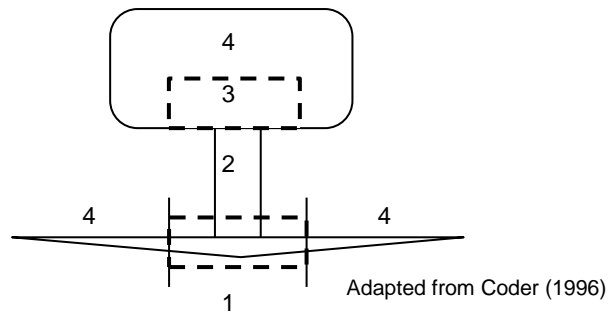
7. Structure

Assesses principal components of tree structure (Diagram 2).

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

Diagram 2: Tree structure zones

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



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

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

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

8. Age class

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

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

9. Useful life expectancy

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

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

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

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

Note that ULE may change for a tree dependent on the prevailing climatic conditions, sudden changes to a tree's growing environment creating an acute stress or impact by pathogens.

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

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

10. Arboricultural Rating

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

| Category | Description |
|--------------------|---|
| High | <p>Tree of high quality in good to fair condition; good vigour. Generally a prominent arboricultural/landscape feature. Particularly good example of the species; rare or uncommon. Tree may have significant conservation or other cultural value.</p> <p>These trees have the potential to be a medium- to long-term components of the landscape (moderately long to long ULE) if managed appropriately.</p> <p>Retention of these trees is highly desirable.</p> |
| Moderate | <p>General -</p> <p>Tree of moderate quality, in fair or better condition. Tree may have a condition, and or structural problem that will respond to arboricultural treatment.</p> <p>These trees have the potential to be a moderate- to long-term component of the landscape (moderate to long ULE) if managed appropriately. Retention of these trees is generally desirable. To aid gradation within this category A has a high retention value than B, as B does to C.</p> <p>The following sub-category relates predominately to age and size and amenity.</p> |
| | <p>Small - and/or semi-mature tree, established, >5 years in the location. May not be a dominant canopy. No special qualities.</p> |
| Low | <p>Unremarkable tree of low quality or little amenity value. Tree in either poor health or with poor structure or a combination. Short to transitory useful life expectancy.</p> <p>Tree is not significant because of either its size or age, such as young trees with a stem diameter below 15 cm. Tree < 5 years in location. These trees are easily replaceable. Trees regularly pruned to restrict size.</p> <p>Tree (species) is functionally inappropriate to specific location and would be expected to be problematic if retained.</p> <p>Retention of such trees may be considered if not requiring a disproportionate expenditure of resources for a tree in its condition and location.</p> |
| Very low (None) | <p>Trees of low quality with an estimated remaining ULE of < 5 years.</p> <p>Tree has either a severe structural defect or health problem or combination that cannot be sustained with practical arboricultural techniques and the loss of the tree would be expected in the short term.</p> <p>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. Tree infected with pathogens of significance to either the health or safety of the tree or other adjacent trees.</p> <p>Tree whose retention would not be viable after the removal of adjacent trees (includes trees that have developed in close spaced groups and would not be expected to acclimatise to severe alterations to surrounding environment – removal of adjacent shelter trees).</p> <p>Tree has a detrimental effect on the environment, for example, the tree is a recognised environmental woody weed with potential to spread into waterways or natural areas.</p> <p>Unremarkable tree of no material landscape, conservation or other cultural value.</p> |

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

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

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There can be no guarantees provided for on-going tree safety. It should be noted that not all of the potential structural concerns associated with trees can be eliminated and that there will always be a residual risk following any mitigation works. Also, not all tree defects are observable and extreme weather events are unpredictable. Since trees are complex, living organisms, it is difficult to quantify and precisely measure all variables when inspecting a standing tree for hazard.

Trees should be reassessed on a regular basis; the scheduled period of reassessment will be dependent on the characteristics of the tree, the landscape context and perceived targets, and resources available to maintain them.