

Tree Assessment & Tree Risk Assessment Report

Wells Street Streaky Bay

Prepared for

The District Council of Streaky Bay

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Contents

1. Executive summary	3
2. Summary of tree risk and works required	3
3. Introduction	4
3.1. Scope	4
3.2. Documents reviewed	4
3.3. Methodology	4
3.4. Notes	5
4. Site description	6
4.1. Site location	6
4.2. Description of the vegetation	6
5. Tree location maps	7
6. Tree assessment results	22
6.1. Species	22
6.2. Maturity	22
6.1. Tree value	23
6.2. Tree condition (Health and Structure)	24
6.3. Life expectancy	26
6.4. Tree risk	27
7. Recommended works	27
8. Discussion	29
9. New tree planting strategies	30
9.1. List of species suitable for new and replacement trees	31
10. Conclusion	32
11. Recommendations	33
12. Appendix 1: Tree Risk Assessment Data Table	35
13. Appendix 2: Tree Data Cards	45

14. Appendix 3: Description of terms and ratings	93
14.1. Tabulated field data	93
14.2. Arboricultural information	94
14.3. AS 4970 -2009	95
14.4. Explanation of terms	96
14.5. Glossary	101

List of Figures

Figure 1 QTRA advisory risk thresholds (QTRA Ltd 2019)	5
Figure 2: Location of Wells Street Streaky Bay (in blue)	6
Figure 3 Clustered bar chart showing the Wells Street Streaky Bay tree species composition.....	22
Figure 4 Chart showing age/maturity groupings of trees in Wells Street Streaky Bay	23
Figure 5 Pie chart showing the tree health ratings of Wells Street trees	24
Figure 6 Pie chart showing the structural condition of trees growing in Wells Street Streaky Bay.....	25
Figure 7 Pie chart showing the Useful Life Expectancy of trees growing in Wells Street Streaky Bay	26

List of Tables

Table 1 Schedule of documents reviewed	4
Table 2 Sample from Appendix 1 Tree assessment data table showing trees recommended for High Priority removal or major pruning and QTRA risk ratings.....	27
Table 3 Sample from Appendix 1 Tree assessment data table showing works required and priority.....	28

1. Executive summary

Active Green Services (AGS) was commissioned by the District Council of Streaky Bay to undertake tree assessments (including Tree Risk Assessments as directed) of approximately four hundred and fifty (450) trees throughout the Streaky Bay township. Four separate reports were requested. This report details all tree assessments undertaken in Wells Street Streaky Bay in February 2023.

The report describes the health, structural condition, useful life expectancy and overall retention value of ninety-nine (99) trees, with recommendations for works provided. In addition, Tree Risk Assessments were undertaken on all tuart trees (*Eucalyptus gomphocephala*) growing within the area of assessment, with risk ratings given and actions required to control the identified risks, provided as necessary.

A list of species suitable for replacement plantings, and strategies for the selection and maintenance of new trees to help build resilience in the population, and enhance its sustainability potential, are also given.

2. Summary of tree risk and works required

Assessment of the ninety-nine (99) trees in the project area (including risk assessment of 23 trees) determined that:

Of the seventeen trees identified by the District Council of Streaky Bay for Tree Risk Assessment

- One (1) tree (ID 133 – *Eucalyptus gomphocephala* – tuart) was found to fall outside of the tolerable risk threshold and action to control the risk should be arranged without delay.
- The remaining sixteen (16) risk assessed trees were found to be within the tolerable risk threshold (although six of these specimens are recommended for removal, and two for structural or weight reduction pruning, as an outcome of their condition).

Of the ninety-nine trees in total assessed in the area of scope

- Twenty-three (23) trees are recommended for removal.
- Twenty-eight (28) trees are recommended for pruning to reduce weight, improve structure or remove dead branches.
- Two (2) trees are recommended for overhead wire clearance pruning.
- Nineteen (19) trees are recommended for canopy lifting or minor formative pruning.
- Nine (9) trees are recommended for irrigation to improve health in the short-term and
- Eighteen (18) trees require no management action at this time.
- **Eight (8) trees require tree removal or pruning works as a matter of Very High Priority.**
- **Seventeen (17) trees require removal or pruning works as a matter of High Priority.**

3. Introduction

This Tree Risk Management Report was prepared for the District Council of Streaky Bay to describe the condition and risk potential (where directed) of ninety-nine (99) street trees growing along Wells Street Streaky Bay. Recommendations for works are given, along with a priority rating to assist with scheduling.

3.1. Scope

The report covers street trees growing in Wells Street Streaky Bay as defined in aerial imagery provided by the District Council of Streaky Bay (RFQ 23-033 Arborist Report – Addendum 1 – Maps for Project Scope). The location of Wells Street is shown in Figure 2: Location of Wells Street Streaky Bay (in blue).

3.2. Documents reviewed

Key documents reviewed in the development of this report are listed below in Table 1 Schedule of documents reviewed.

Table 1 Schedule of documents reviewed

Document reference	Title	Type
DCSB-EM-05.04	District Council of Streaky Bay Tree Management Policy	Policy
DCSB-EM-5.03	District Council of Streaky Bay Sustainability and Environment Policy	Policy
N/a	District Council of Streaky Bay – Our Strategic Future 2020-2040	Strategy
RFQ 23-033	District Council of Streaky Bay Arborist Report – Addendum 1 – Maps for Project Scope	Project Scope

3.3. Methodology

Tree Assessments were undertaken by Senior Consulting Arborists of Active AGS - Ali Jasper and Sarah Nunn - on Tuesday February 8 and Wednesday February 9, 2023. Trees were assessed using both Visual Tree Assessment (VTA) methodology and Quantified Tree Risk Assessment methodology (QTRA).

Visual Tree Risk Assessment methodology (QTRA Ltd 2019) allows for the inspection and consideration of all tree parts and is typically used in most arboricultural inspections.

Quantified Tree Risk assessment provides a framework by which to assess the risk presented by a tree. This methodology results in the presentation of the risk as a ratio where, 1:1 is considered to be the highest level of risk i.e. will most definitely fail, to 1:1,000,000 or greater which is an extremely low level of risk. Risks between 1:1 and 1:10,000 are generally considered unacceptable and actions to reduce the risk would be required. Risks greater than 1:10,000 are generally tolerable. Figure 1 QTRA advisory risk thresholds (QTRA Ltd 2019) overleaf details these.

The assessment of risk considered three main factors: the likelihood of a tree or tree part failing, the target on which it might fail, and its value; and the size of the tree part may fail. These factors are used in QTRA to calculate the final 'risk score'.

Thresholds	Description	Action
1/1 000	Unacceptable Risks will not ordinarily be tolerated	Control the risk
	Unacceptable (where imposed on others) Risks will not ordinarily be tolerated	Control the risk Review the risk
1/10 000	Tolerable (by agreement) Risks may be tolerated if those exposed to the risk accept it, or the tree has exceptional value	Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value Review the risk
	Tolerable (where imposed on others) Risks are tolerable if ALARP	Assess costs and benefits of risk control Control the risk only where a significant benefit might be achieved at a reasonable cost Review the risk
1/1 000 000	Broadly Acceptable Risk is already ALARP	No action currently required Review the risk

Figure 1 QTRA advisory risk thresholds (QTRA Ltd 2019)

3.4. Notes

1. Eucalyptus trees that cannot be identified down to species level due to lack of distinguishing features (dead trees for example) are listed as *Eucalyptus* sp. in the data tables accompanying this report.
2. The hybridization of flora species can cause an intermediate or incomplete form of morphological features and thereby affect the accuracy of field identification. Seasonal variations influence the presence of flowering and fruiting in flora species and may also affect the accuracy of field identification.
3. Active Green Services did not undertake any soil analysis, below ground root analysis or aerial tree inspections. These detailed investigations may provide further insights into tree condition.

4. Site description

4.1. Site location

Wells Street Streaky Bay runs through the centre of the township in an east-west direction (generally). The eastern extent of the street borders a portion of the foreshore and Streaky Bay Tourist Park as well as the Streaky Bay Primary School. Land use in the remaining portion of the street is both urban residential and commercial where it intersects with the main street of the township, Bay Road. See Figure 2: Location of Wells Street Streaky Bay (in blue) below.

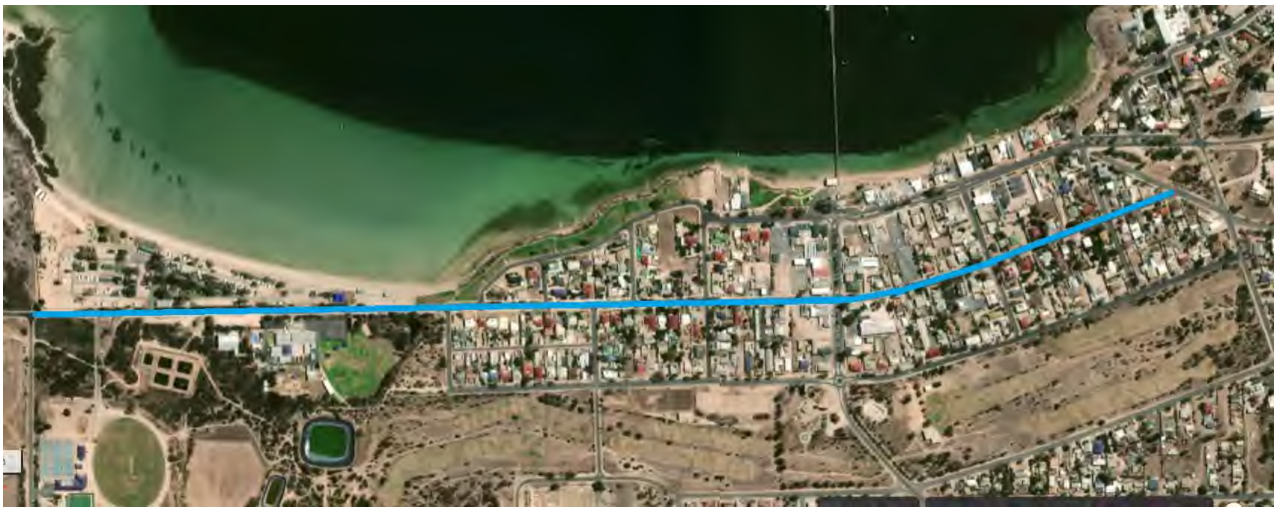


Figure 2: Location of Wells Street Streaky Bay (in blue)

4.2. Description of the vegetation

The street tree population of Wells Street Streaky Bay is comprised almost entirely of native trees, except for four exotic tree specimens – three Italian cypress pines (*Cupressus sempervirens*) and one Aleppo pine (*Pinus halepensis*). All trees in the street are cultivated (planted) specimens.

The eastern end of the street (from Flemming Terrace to AB Smith Road) has been exclusively planted with tuart trees (*Eucalyptus gomphocephala*), which have a strong presence in Streaky Bay.

In the residential and commercial sections of the street, a mixed species planting theme exists, with most street trees small to medium sized Eucalypts. Silver gimlets (*Eucalypts campaspe*) and coral trees (*Eucalyptus torquata*, *Eucalyptus torwood*) are the most represented species.

Mature and over-mature trees out-weigh young to semi-mature trees in the area of scope suggesting that there has either been limited recruitment of street trees, or that there has perhaps been a high incidence of young tree loss over recent years.

Where street trees exist, they generally grow together and the close centres at which they've been placed provides good shade for pedestrians. There are some large tracts of unplanted sections of the street however, particularly in the residential area of the street east of Bay Road. This could be an outcome of poorer soils and more difficult conditions for establishment, a legacy of views to the water or the vacant sites could simply relate to the limited planting of new trees in recent times.

5. Tree location maps



Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.

1 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

Active Green Services
53 Jersey Road, Bayswater VIC 3153



Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.

2 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

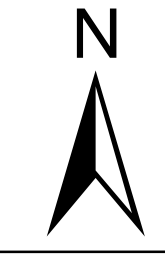
Active Green Services
53 Jersey Road, Bayswater VIC 3153



- Legend**
- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay

Arboricultural Survey



Map no.
3 of 15

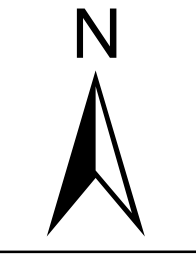
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Drawn By: C. King	Date: 6/04/2023
Active Green Services 53 Jersey Road, Bayswater VIC 3153	



Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
4 of 15

Created by: Active Green Services
 Drawn By: C. King
 Date: 6/04/2023
Active Green Services
 53 Jersey Road, Bayswater VIC 3153

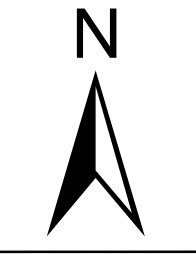


Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay

Arboricultural Survey



Map no.
5 of 15

Created by: Active Green Services	
	Drawn By: C. King
	Date: 6/04/2023
Active Green Services 53 Jersey Road, Bayswater VIC 3153	



Legend

Recommendation

- Remove
- Retain
- SRZ
- TPZ

Wells Street Streaky Bay

Aboricultural Survey



Map no.
6 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

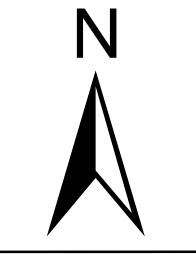
Active Green Services
53 Jersey Road, Bayswater VIC 3153



Legend

- Recommendation SRZ
- Remove TPZ
- Retain

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
7 of 15

Created by: Active Green Services

Drawn By: C. King

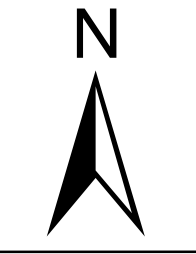
Date: 6/04/2023

Active Green Services
53 Jersey Road, Bayswater VIC 3153



- Legend**
- Recommendation**
- Remove
 - Retain
 - ▭ SRZ
 - ▭ TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.
8 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

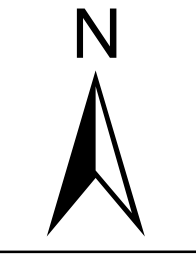
Active Green Services
53 Jersey Road, Bayswater VIC 3153



Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
9 of 15

Created by: Active Green Services	
Drawn By: C. King	Date: 6/04/2023
Active Green Services 53 Jersey Road, Bayswater VIC 3153	



Legend

- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
10 of 15

Created by: Active Green Services
 Drawn By: C. King
 Date: 6/04/2023
 Active Green Services
 53 Jersey Road, Bayswater VIC 3153



Sources: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

- Recommendation**
- SRZ
 - TPZ
 - Potentially remove
 - Retain

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.

10a of 15

Created by: Active Green Services

Drawn By: C. King

Date: 30/03/2023

**Active Green Services
53 Jersey Road, Bayswater VIC 3153**



Legend

- Recommendation**
- SRZ
 - Remove
 - Retain
 - TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.
11 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

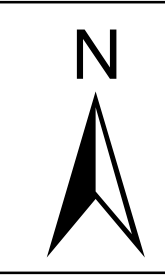
Active Green Services
53 Jersey Road, Bayswater VIC 3153



Legend

- Recommendation
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.
12 of 15

Created by: Active Green Services

Drawn By: C. King

Date: 6/04/2023

Active Green Services
53 Jersey Road, Bayswater VIC 3153



- Legend**
- Recommendation**
- Remove
 - Retain
 - SRZ
 - TPZ

Wells Street Streaky Bay Arboricultural Survey



Map no.
13 of 15

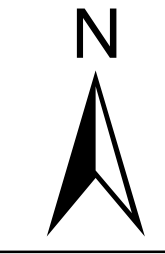
Created by: Active Green Services	
Drawn By: C. King	Date: 6/04/2023
Active Green Services 53 Jersey Road, Bayswater VIC 3153	



Legend

- Recommendation**
- SRZ
 - TPZ
 - Remove
 - Retain

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
14 of 15

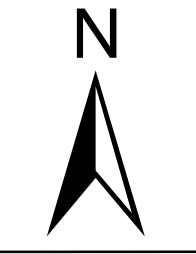
Created by: Active Green Services
 Drawn By: C. King
 Date: 6/04/2023
Active Green Services
 53 Jersey Road, Bayswater VIC 3153



Legend

- Recommendation**
- SRZ
 - TPZ
 - Remove
 - Retain

**Wells Street Streaky Bay
Arboricultural Survey**



Map no.
15 of 15

Created by: Active Green Services	
Drawn By: C. King	Date: 6/04/2023
Active Green Services 53 Jersey Road, Bayswater VIC 3153	

6. Tree assessment results

Tree risk assessments (QTRA method) were carried out on seventeen (17) trees in the Wells Street Tree Assessment area. The remaining seventy-two trees were the subject of general tree assessment – VTA (Mattheck & Breleor, 1994).

All tree data can be found in Appendix 1: Tree Assessment Data Table with photographs and details of each tree provided in Appendix 2: Tree Data Cards. Data fields and categories are described in Appendix 3: Explanation of terms and ratings.

6.1. Species

The dataset shows that the ninety-nine (99) trees assessed represent thirteen (13) tree species. Ninety-six percent (96%) belong to the genus *Eucalyptus* (gum trees). Twenty-two percent (22%) are gimlets (*Eucalyptus Campaspe*, *Eucalyptus salubris*), twenty-five percent (25%) are coral tree or coral tree hybrid species (*Eucalyptus torquata*, *Eucalyptus torwood*) and twenty-five percent (25%) are species of *Eucalyptus gomphocephala* (tuart trees). The species mix is demonstrated in Figure 3 Clustered bar chart showing the Wells Street Streaky Bay tree species composition below.

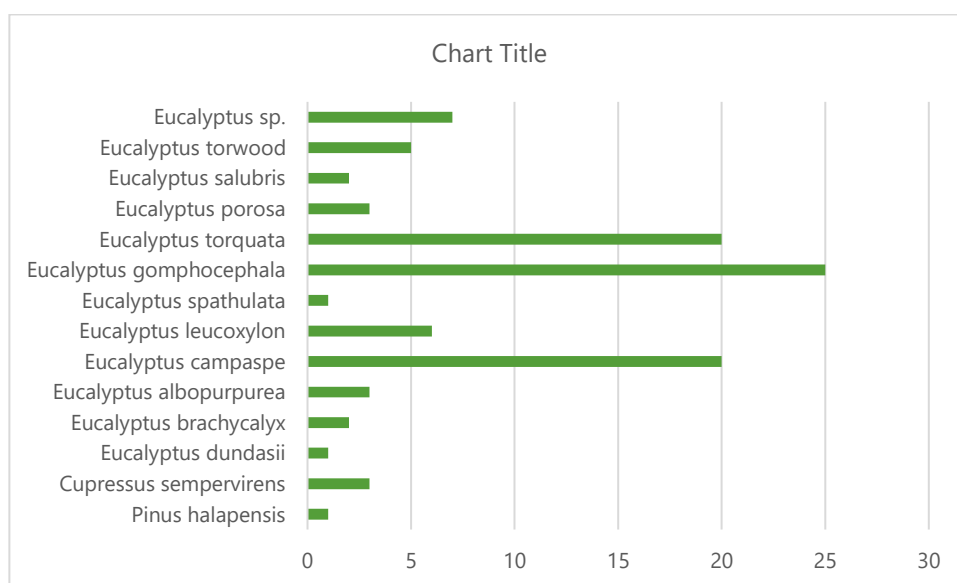


Figure 3 Clustered bar chart showing the Wells Street Streaky Bay tree species composition

6.2. Maturity

The spread of ages of trees growing in Wells Street Streaky Bay is uneven with data skewed to the mature and over-mature categories. Sixty-seven trees (68%) are mature while a further twenty-three (23%) are over-mature (a term describing trees that are nearing the end of their useful lives characterised by crown low foliage density, temporary shoot initiation on branches and stems and higher rates of deadwood production than normal). Less than ten percent of the population are young (juvenile to semi-mature) trees.

Figure 4 Chart showing age/maturity groupings of trees in Wells Street Streaky Bay below illustrates the age categories of trees in the study area. Over-mature trees often have reduced health and/or compromised structure and present a higher likelihood of failure than a healthy tree as an outcome. Fifty-two percent of over-mature trees in Wells Street are tuart tree specimens (*Eucalyptus gomphocephala*) which is an established pattern throughout the township.

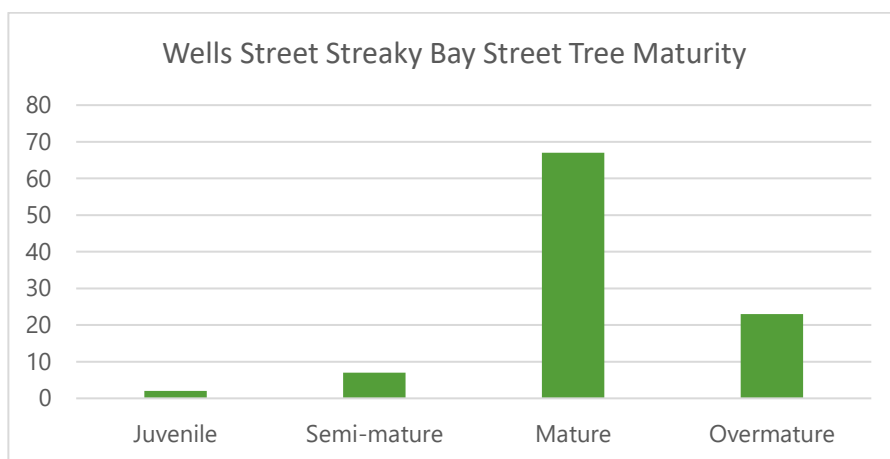


Figure 4 Chart showing age/maturity groupings of trees in Wells Street Streaky Bay

6.1. Tree value

High value trees are generally the larger trees on site that make a significant visual and functional contribution to their surroundings (high amenity value). There are only thirteen trees (13% of the population) in Wells Street that have been rated as high value. The majority of trees large enough to make this category are tuart specimens (*Eucalyptus gomphocephala*) growing near the Streaky Bay Foreshore Tourist Park. While high-value trees usually have a reasonably long useful life expectancy, two trees with short useful life expectancies have been included in this classification due to their continuing visual appeal and presence, but both are recommended for removal due to their condition.

Forty-eight (48) trees are moderately valuable to the site. These are generally not as large or attractive as the higher ranked trees and therefore most standard street trees fall into this category.

Twenty-six (26) specimens have been classified as low value. Low value trees offer limited overall value due to their age or condition or may consist of a less than desirable species – Italian cypress (*Cupressus sempervirens*) for example. Older trees in poor condition can be unsightly and require a higher level of inspection and maintenance than trees in good health and will frequently be classified as low value for this reason. Very low value trees offer no amenity value at all. Ten (10) trees in the area of assessment are dead and were therefore rated very low value at the time of assessment.

6.2. Tree condition (Health and Structure)

Tree Health

Forty-four (44) trees growing in the streetscape are in good health.

Nineteen (19) specimens display characteristics better aligned to the fair health category due to reduced vigour or vitality evidenced (signs of reduced health include changes to foliage size and colour or a sparser tree canopy). Trees in fair health generally have the potential to recover with or without intervention (although intervention significantly increases the chance of ongoing viability).

In contrast, trees in poor health are less likely to make a full recovery. Visual indicators of poor health include significant levels of dead wood (more dead than live branches for example), severe pest infestation or disease symptoms (which are underpinned by a decline in health and lowered defences), or visible stress response characteristics such as substantial tip dieback or a high degree of temporary shoot production along the branches or trunk of a tree. Fourteen (14) trees display one or more of these characteristics.

Twelve (12) trees in the street are in very poor health. Very poor trees are almost dead with no chance of recovery. Dead trees are recorded as such under this category. Ten (10) trees were assessed to be dead at the time of inspection.

The dataset suggests that health ratings correlate with species to some extent, as well as the individual tree's stage of life. Fifty-two percent of trees in poor health for example are tuart trees while twenty percent are Silver gimlets (*Eucalyptus campaspe*) and twenty percent Coral trees (*Eucalyptus torquata*). Figure 5 Pie chart showing the tree health ratings of Wells Street trees below, illustrates the proportion of trees in good to poor condition in the street. The chart shows that trees in good health (as depicted by the blue segment outlined in red) make up less than half of the Wells Street tree population.

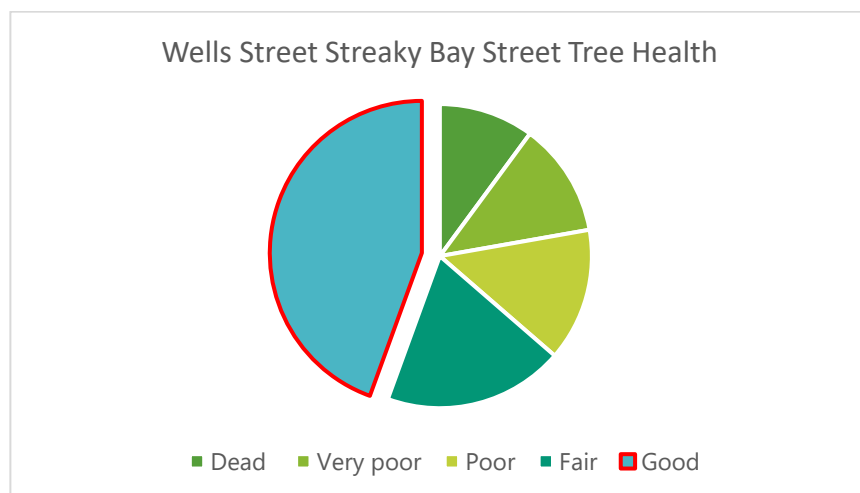


Figure 5 Pie chart showing the tree health ratings of Wells Street trees

6.2.1. Tree Structure

As the condition of a tree is the sum of its health and structure, ratings of tree structure are equally as important as health in determining the overall condition of a tree. Moreover, the structural integrity of a tree significantly impacts its failure potential and is therefore strongly linked to tree risk. For a full description of Tree Structure ratings please see Appendix 3: Description of terms and ratings, 15.1.10 Structure.

Results show that;

- Twenty-eight (28) trees display good structure,
- Forty-four (44) trees display fair structure
- Twenty-four (24) trees have poor to very poor structure; and
- Three (3) trees were found to have a hazardous structure (these trees were also risk assessed are discussed further under the heading Tree Risk).

Twenty-seven (27) of the twenty-eight (28) trees found to exhibit poor to hazardous structure are recommended for risk reduction works in the short-term (tree removal – 93%, or weight reduction/formative pruning – 7%).

These ratings are illustrated in Figure 6 Pie chart showing the structural condition of trees growing in Wells Street Streaky Bay below. The segments outlined in red represent trees with a poor to hazardous structure which amounts to approximately one quarter of the street trees assessed in Wells Street Streaky Bay.

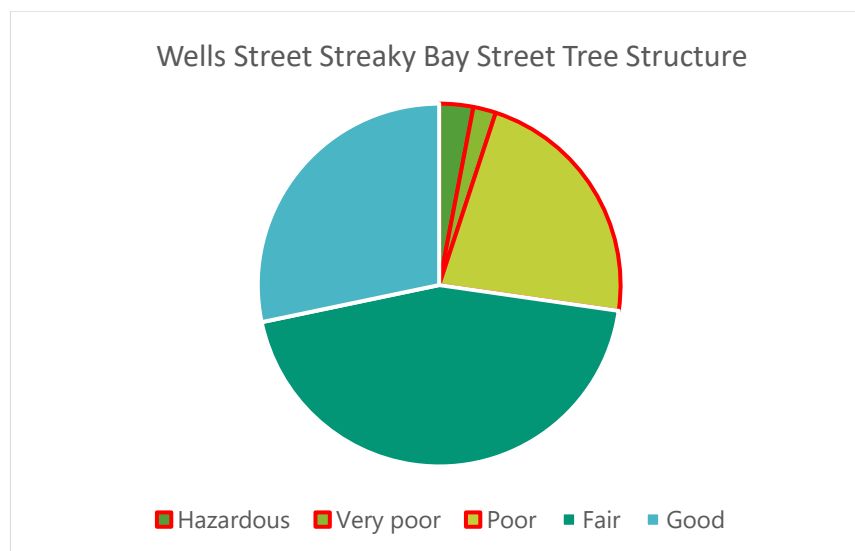


Figure 6 Pie chart showing the structural condition of trees growing in Wells Street Streaky Bay

6.3. Life expectancy

Almost half of the Wells Street tree population assessed (49%) have been estimated to have useful lives of over twenty-five years.

In contrast, twelve (12) trees have been classified as having a ULE (Useful life Expectancy) of between 1 and five years only. Eight (8) of these are recommended for removal in the short-term, one (1) for structural pruning and three (3) for irrigation in an effort to restore health and extend longevity.

Twelve (12) trees are already dead and have been classified as having a life expectancy of 0 years. Figure 7 Pie chart showing the Useful Life Expectancy of trees growing in Wells Street Streaky Bay below, shows that approximately one third of the population are dead already or not expected to live longer than 15 years.

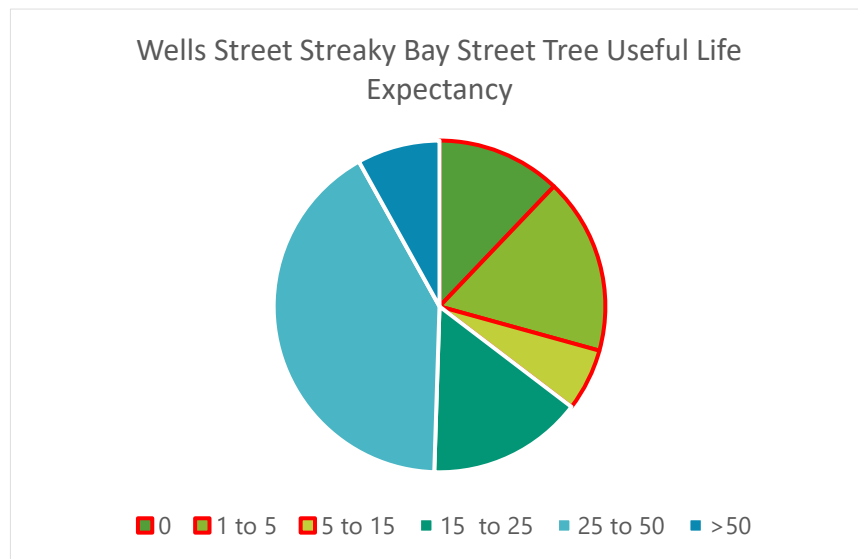


Figure 7 Pie chart showing the Useful Life Expectancy of trees growing in Wells Street Streaky Bay

6.4 Tree risk

Seventeen (17) tuart trees (*Eucalyptus gomphocephala*) located adjacent to the Streaky Bay Foreshore Tourist Park were the subject of Tree Risk Assessment. One (1) tree currently presents an unacceptable risk according to the risk rating method applied. This tree (ID 133- Risk Rating 1:40) is not recommended for removal however, as it can be retained with structural pruning. These works are considered Very High Priority and are recommended to be undertaken as soon as possible due to the 1:40 rating of the tree. Considering the lower visual appeal of the tree than other specimens, and its low useful life expectancy, its retention value is also low and therefore if removal of the tree is preferred this would also be an appropriate course of action for elimination of the risk.

Six (6) further trees are also recommended for removal as a Very High Priority. Despite the tolerable risk scores calculated for these trees, they have comparatively higher risk scores to the remaining risk assessed trees, or in the case of Tree 150, the target area is a playground. As Table 2 Sample from Appendix 1 Tree assessment data table showing trees recommended for High Priority removal or major pruning and QTRA risk ratings below shows, the calculated risk scores for the six other trees tabled were between 1:17200 and 1:40000 and therefore fast action to control these risks is also recommended. The flagship tuart tree (*Eucalyptus gomphocephala*) that grows in the Main Street (on the corner of Wells Street) – Tree 53 – has also been rated as 40,000:1 and while the tree is not recommended for removal, the weight reduction works recommended for the sizeable branch of the tree over-hanging the road have also been assigned a Very High Priority and it is recommended that these works are also arranged without delay.

All trees with an unacceptable risk (risk scores between 1:1 and 1:10,000 - Tree 133) are highlighted in red in Appendix 1: Tree assessment data table, as also demonstrated in Table 2 below.

Table 1 Sample from Appendix 1 Tree assessment data table showing trees recommended for High Priority removal or major pruning and QTRA risk ratings

ID	Botanical Name	Health	Structure	ULE	Maturity	Value	Risk Score	WorksReq	Priority
53	<i>Eucalyptus gomphocephala</i>	Good	Good	25 – 50	Mature	High	1:40000	Weight reduce limb over road (east side)	Very High
129	<i>Eucalyptus gomphocephala</i>	Dead	Poor	0	Over mature	Very low	1:17200	Remove tree	Very High
133	<i>Eucalyptus gomphocephala</i>	Poor	Poor	15 - 25	Over mature	Moderate	1:40	Structural prune	Very High
138	<i>Eucalyptus gomphocephala</i>	Very poor	Hazardous	1 - 5	Over mature	Low	1:40000	Remove tree	Very High
141	<i>Eucalyptus gomphocephala</i>	Very poor	Hazardous	1 - 5	Over mature	Low	1:40000	Remove tree	Very High
142	<i>Eucalyptus gomphocephala</i>	Very poor	Hazardous	1 - 5	Over mature	Low	1:40000	Remove tree	Very High
150	<i>Eucalyptus gomphocephala</i>	Dead	Poor	0	Over-mature	Very low	1: 164000	Remove tree	Very High
151	<i>Eucalyptus gomphocephala</i>	Poor	Very Poor	1 - 5	Over mature	Low	1: 40000	Remove tree	Very High

The ten (10) remaining trees that were risk assessed exhibit risk scores greater than 1:164,000. However Arborist inspection has further determined that seven of these trees require removal, or substantial pruning as a High Priority to remain appropriate for retention.

7. Recommended works

While only one (1) tree was found to present an intolerable risk (with fast action needed), this report recommends removal of twenty-three (23) trees in total. Additionally, it is recommended that forty-nine (49) trees are pruned, as summarised below.

As an outcome of arboricultural assessment of the ninety-nine trees in Wells Street Streaky Bay;

- Twenty-three (23) trees are recommended for removal,
- Eight (8) trees are recommended for structural or weight reduction pruning (major pruning),
- Twenty (20) trees are recommended for removal of deadwood,
- Two (2) trees are recommended for wire clearance pruning,
- Nineteen (19) trees are recommended for minor lift or formative pruning,
- Nine (9) trees are recommended for irrigation (manual watering), and
- Eighteen (18) trees require no action.

All required works are tabled in Appendix 1: Tree Assessment Data Table. All works have been assigned a priority according to health, condition and tree risk potential. Works required are colour coded according to the priority assigned to assist with works scheduling (red - very high, beige – high, and moderate to low - yellow).

An example of how recommended works are displayed in Appendix 1: Tree assessment data is provided below in *Table 3 Sample from Appendix 1 Tree assessment data table showing works required and priority*.

Table 2 Sample from Appendix 1 Tree assessment data table showing works required and priority

ID	Botanical Name	Health	Structure	ULE	Maturity	Value	Risk Score	WorksReq	Priority
142	<i>Eucalyptus gomphocephala</i>	Very poor	Hazardous	1 - 5	Over-mature	Low	1:40000	Remove tree	Very High
150	<i>Eucalyptus gomphocephala</i>	Dead	Poor	0	Over-mature	Very low	1: 164000	Remove tree	High
199	<i>Eucalyptus torquata</i>	Fair	Fair	25 - 50	Mature	Moderate	N/a	Deadwood > 25mm	High
212	<i>Eucalyptus campaspe</i>	Fair	Good	> 50	Mature	Moderate	N/a	Deadwood > 25mm	Moderate
213	<i>Eucalyptus dundasii</i>	Fair	Fair	5 - 15	Mature	High	N/a	Deadwood > 25mm	Moderate
218	<i>Eucalyptus torquata</i>	Good	Fair	25 - 50	Mature	Moderate	N/a	Canopy lift	Low
219	<i>Eucalyptus porosa</i>	Fair	Fair	15 - 25	Mature	Low	N/a	Canopy lift	Low

8. Discussion

The high degree of tree removal and pruning works identified for nature strip trees growing in Wells Street Streaky Bay is likely to be an outcome of a range of factors - namely the low nutrient and water holding capacity of natural soils, the impacts of drought and heat; and natural attrition. While many tuarts (*Eucalyptus gomphocephala*) are visibly declining around the township as an outcome of old age, many of the smaller growing mallees and gimlets which have significantly reduced life spans as cultivated trees are also nearing end of life, albeit stressful growing conditions are likely to have fast-tracked the onset of decline in many of these trees.

Where trees are in active decline, there is little that can be done other than manage deadwood and potential risks as they develop. Where trees are younger, and stress has induced temporary decline, manual watering may assist the trees to recover. While all trees would benefit from the application of water in long absences of meaningful rain and ongoing application of mulch will help to retain soil moisture for longer periods, nine (9) trees are specifically recommended for irrigation to help improve their health in the short-term. This indicates that drought and/ or heat are the biggest stress factors for planted trees in the township.

Drought is expected in the semi-arid region however climate data shows that rainfall rates are declining, and temperatures are rising. In January and March of 2019, the temperatures in Streaky Bay were the highest they have been in thirty years while the highest temperature on record of 47.1 degrees was documented in December of the same year (Bureau of Meteorology, 2023). Weather records also show that while the mean annual rainfall is 378.8mm/year for Streaky Bay, over the past 30 years the annual average has been 358mm. In November 2020 the lowest rainfall on record was experienced in Streaky Bay - just 1.3mm.

Change of climate is recognised holistically by the District Council of Streaky Bay and a commitment to monitoring natural and built landscapes and taking action as necessary to assist adaptation has been made (District Council of Streaky Bay 2016 & 2020). Increased use of water to keep landscape/streetscape plantings alive and healthy as climate change continues to advance now appears to be necessary - not just to protect environmental values and the visual amenity of the township but to also sustain the town's liveability. Cool and shady streets contribute significantly to the comfort and wellbeing of the local community, as well as the town's visitors.

In long periods of dry, irrigation may be required to aide survival of numerous trees in the subject area of assessment. This may be as little as one deep watering during hot and dry weather conditions. Deep watering consists of gentle application of approximately 100L of water per mature tree specimen to infiltrate deep into the soil profile and ensure the rhizosphere (tree roots and surrounding soil) is sufficiently wetted and to also encourage roots to grow deeper into the soil profile to access water.

The application of water over several visits during warmer months will be of the most benefit and maximise cooling benefits (the greater the amount of water taken up by tree, the higher the rate of transpiration which cools the surrounding air). Water can be applied via water barriers, drip irrigation or manually at low pressure.

Passive watering treatments (flush kerb with road grading towards trees or kerb inlets for example) could be considered for inclusion in future road and infrastructure upgrades, although these have limited benefit in the absence of rain and cannot be relied on as a future proofing measure.

Site soils are generally low in nutrient value and free draining, and therefore mulch will assist with organic matter build up in the soil as well as general moisture retention. Application of a thin layer of mulch will be beneficial for all trees with bare soil beneath. Reducing competition from vigorous under-plantings to trees should also be considered to maintain the health of trees with many street trees noted to have ground cover plantings beneath (the type and nature of the underplanting will affect how much competition for water is occurring).

9. New tree planting strategies

Careful selection, placement and care of new tree plantings will have a significant impact on the longevity and risk potential of the trees as they mature.

Replacement trees should be planted as soon as possible, and where resources allow, new trees could be added to vacant planting sites where there are significant breaks in canopy cover within the street. Moreover, strategic planting of additional trees to provide closer planting centres offers the potential to provide more shade and cooling benefits for pedestrians in areas with a higher occupancy and use (for example in the commercial precinct of Wells Street).

Planting a higher number of new to removed trees will help to visually minimise and compensate for the immediate loss, as well as future losses with a significant portion of the population not expected to live beyond the next fifteen years. It is recommended that succession planning is undertaken now to offset the expected loss of further trees within a relatively short time period. This is especially applicable to tuart trees (*Eucalyptus gomphocephala*) located at the eastern end of Wells Street, adjacent to the Streaky Bay Foreshore Tourist Park. Several trees with tolerable risk ratings are recommended for retention in the short term however their ULEs have been shown to be low.

A long and intensive establishment maintenance program for all new tree plantings will help to secure vigour and vitality for the life of the trees. Tree establishment maintenance programs are often insufficient in intensity or duration despite this period of settling-in being critical to the fitness and resilience of a tree over its entire life.

Formative pruning of trees while young – at 1-2 years and again at 5 years - will also significantly reduce risk potential and maintenance requirements for the life of trees. Where mallee trees are involved, training of leaders and removal of low growing branches while young can avoid or reduce canopy lifting requirements in the future.

Selection of species for future trees should consider the tolerance of the species to existing site conditions as well as the adaptation potential of the species to increased heat, lower rainfall and a greater incidence of storms/storm surges. While lignotuberous species may attract another type of maintenance (with reference to the development of basal shoots as a response to stress), this adaptation has evolved in many Eucalypt species – especially Mallee type Eucalypts – so that they have capacity to quickly regenerate and recover after periods of significant stress.

A good diversity of species, avoiding over-representation of any one species, will help to prevent future incidence of mass tree loss. While the streetscape shows reasonable species diversity, it is recommended that local species documented as having a high tolerance to drought are incorporated into the planting mix, with reduced plantings of species with higher representation than others. The blending of existing and new tree species can occur without impacting streetscape character due to the existing mixed planting theme in all areas of the streetscape except the eastern end which is dominated by tuart trees).

It is recommended that tuart trees continue to be planted for legacy, in accordance with the Streaky Bay Tree Policy, however mixing plantings with a change of species where natural breaks in a row planting occur (for example planting several tuarts and then changing the species for the next grouping, returning to tuarts after that), or staging planting where pure stands are desirable, will provide greater potential for sustaining canopy cover in these areas into the future.

9.1. List of species suitable for new and replacement trees

Replacement species should be in accordance with Council's species list (currently under review). An indicative list of species suitable for planting in Wells Street is provided below.

- *Brachychiton populneus* (kurrajong)
- *Callistemon viminalis* (weeping bottlebrush)
- *Cupaniopsis anacardiodes* (tuckeroo)
- *Eucalyptus brachycalyx* (gilja)
- *Eucalyptus diversifolia* subsp. *diversifolia* (coastal white mallee)
- *Eucalyptus eremophila* (sand mallet)
- *Eucalyptus dumosa* (white mallee)
- *Eucalyptus gomphocephala* (tuart)
- *Eucalyptus gracilis* (white mallee)
- *Eucalyptus incrassata* (ridge fruited mallee)
- *Eucalyptus oleosa* (red mallee)
- *Eucalyptus phenax* subsp. *phenax* (cong mallee)
- *Eucalyptus leucoxylon* (yellow gum)
- *Eucalyptus platypus* (platypus gum)
- *Eucalyptus porosa* (box mallee)
- *Eucalyptus salubris* (gimlet)
- *Eucalyptus socialis* (red mallee)
- *Eucalyptus 'Torwood'* (hybrid coral gum)
- *Geijera parvifolia* (wilga)
- *Pittosporum angustifolium* (native apricot)

10. Conclusion

Assessment of ninety-nine (99) trees in Wells Street Streaky Bay has identified the need for substantial tree removal and pruning works to reduce the risk and improve the health of the trees in the short term. Works recommended for eight (8) trees have been assigned a Very High Priority and are recommended for completion without delay.

A net gain in tree numbers as also recommended will see the existing canopy and shade value of trees not just replaced over-time but enhanced. Careful species selection and programmed maintenance including ongoing watering and formative pruning, especially during establishment but also beyond this initial phase of tree growth and development, will help to reduce the maintenance requirements and risk potential of the future trees of Wells Street. Moreover, proactive cyclic planting of new trees will help ensure that the shady streets of Streaky Bay can be enhanced and sustained into the future.

11. Recommendations

- Review and action recommendations in Appendix 1: Tree Risk Assessment Data Table, specifically required works.
- Ensure Very High Priority works are actioned quickly, and High Priority works over within 3 months.
- Reactively water trees recommended for irrigation and continue to monitor these, and all trees within the area of scope, for signs of water stress.
- Instigate a proactive street tree watering program for the drier months of the year, either targeting vulnerable species or ideally, providing water to all trees over several maintenance visits per year.
- Enact a mulching program for all trees for retention without vegetation growing immediately beneath.
- Ensure all removed trees are replaced at a minimum ratio of 1:1
- Develop and deliver a tree establishment maintenance program that ensures new trees are provided with best practice establishment care for a minimum period of 12 months, preferably 24 months.
- Formatively prune all young trees at 2 years and 5 years post planting.
- Consider and commence asset replacement planning for all trees with useful life expectancies below 15 years.
- Formally reinspect all trees in 2 to 3 years' time.

12. References

Bureau of meteorology (2023) *Streaky Bay Weather* www.bom.gov.au/places/sa/streaky-bay. Access Date March 20, 2023.

District Council of Streaky Bay (2020) *Environment and Sustainability Policy*.

District Council of Streaky Bay (2016) *Tree Management Policy*.

Mattheck, C., and Breloer, H. (1994) *Field Guide for Visual Tree Assessment*. Arboricultural Journal, Vol 18 pp 1-2.

Quantified Tree Risk Assessment Limited (2019) *Quantified Tree Risk Assessment Practice Note Version 5*. Cheshire, UK.

13. Appendix 1: Tree Assessment Data Table

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
53	<i>Eucalyptus gomphocephala</i>	Tuart	21	20	127	155	Good	Good	Mature	25 - 50	High	1:40000	Weight reduce limb over road (east side)	Very High
129	<i>Eucalyptus gomphocephala</i>	Tuart	18	9	59	65	Dead	Poor	Over mature	0	Very low	1:17200	Remove tree	Very High
130	<i>Eucalyptus gomphocephala</i>	Tuart	21	11	55	57	Very poor	Poor	Over mature	1 - 5	Moderate	1:172000	Irrigate	High
131	<i>Eucalyptus gomphocephala</i>	Tuart	18	15	89	91	Very poor	Poor	Over mature	1 - 5	Moderate	1:172000	Irrigate	High
132	<i>Eucalyptus gomphocephala</i>	Tuart	18	9	61	78	Very poor	Poor	Over mature	1 - 5	Moderate	1:172000	Irrigate	High
133	<i>Eucalyptus gomphocephala</i>	Tuart	17	15	82	107	Poor	Poor	Over mature	15 - 25	Moderate	1:40	Structural prune	Very High
136	<i>Eucalyptus gomphocephala</i>	Tuart	17	8	45	52	Very poor	Fair	Over mature	1 - 5	Low	1:172000	Remove tree	High
137	<i>Eucalyptus gomphocephala</i>	Tuart	16	13	84	102	Good	Fair	Mature	25 - 50	High	1:1720000	Weight reduce	Moderate
138	<i>Eucalyptus gomphocephala</i>	Tuart	15	6	39	54	Very poor	Hazardous	Over mature	1 - 5	Low	1:40000	Remove tree	Very High
139	<i>Eucalyptus gomphocephala</i>	Tuart	15	13	75	77	Good	Fair	Mature	25 - 50	High	1:1720000	Weight reduce	Moderate

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
140	<i>Eucalyptus gomphocephala</i>	Tuart	16	11	50	64	Good	Fair	Mature	25 - 50	High	1:1720000	Weight reduce	Moderate
141	<i>Eucalyptus gomphocephala</i>	Tuart	16	21	105	140	Very poor	Hazardous	Over mature	1 - 5	Low	1:40000	Remove tree	Very High
142	<i>Eucalyptus gomphocephala</i>	Tuart	16	21	105	140	Very poor	Hazardous	Over mature	1 - 5	Low	1:40000	Remove tree	Very High
144	<i>Eucalyptus gomphocephala</i>	Tuart	12	12	100	120	Poor	Poor	Mature	15 - 25	Low	1: 5904000	Weight reduce	Moderate
150	<i>Eucalyptus gomphocephala</i>	Tuart	14	10	74	109	Dead	Poor	Over mature	0	Very low	1: 164000	Remove tree	Very High
151	<i>Eucalyptus gomphocephala</i>	Tuart	16	21	127	136	Poor	Very Poor	Over mature	1 - 5	Low	1: 40000	Remove tree	Very High
157	<i>Eucalyptus campaspe</i>	Silver Gimlet	6	4	20	26	Good	Poor	Mature	15 - 25	Low	N/a	Formative prune, irrigate.	Low
158	<i>Eucalyptus campaspe</i>	Silver Gimlet	5	5	18	20	Good	Fair	Mature	15 - 25	Low	N/a	Irrigate	Low
159	<i>Eucalyptus campaspe</i>	Silver Gimlet	7	8	20	22	Fair	Good	Mature	25 - 50	Moderate	N/a	Mulch	Low
160	<i>Eucalyptus torquata</i>	Coral Gum	5	6	21	25	Good	Fair	Mature	15 - 25	Moderate	N/a	Canopy lift	Moderate

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
161	<i>Eucalyptus campaspe</i>	Silver Gimlet	7	6	18	20	Fair	Good	Mature	25 - 50	Moderate	N/a	Deadwood	Moderate
162	<i>Eucalyptus spathulata</i>	swamp mallett	5	4	24	25	Good	Good	Mature	15 - 25	Low	N/a	No action required	N/a
163	<i>Eucalyptus campaspe</i>	Silver Gimlet	7	6	15	18	Fair	Good	Mature	25 - 50	Moderate	N/a	Deadwood	Moderate
164	<i>Eucalyptus campaspe</i>	Silver Gimlet	7	6	16	20	Good	Good	Mature	25 - 50	Moderate	N/a	Deadwood	Moderate
165	<i>Eucalyptus albopurpurea</i>	Port Lincoln Mallee	6	5	22	26	Good	Good	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
166	<i>Eucalyptus campaspe</i>	Silver Gimlet	6	5	18	22	Good	Good	Mature	25 - 50	Moderate	N/a	No action required	N/a
167	<i>Eucalyptus torquata</i>	Coral Gum	6	6	30	36	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
168	<i>Eucalyptus torquata</i>	Coral Gum	5	4	26	28	Good	Fair	Mature	25 - 50	Moderate	N/a	No action required	N/a
169	<i>Pinus halapensis</i>	Aleppo Pine	11	8	32	43	Good	Good	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
170	<i>Eucalyptus sp.</i>	Gum	5	3	21	21	Very poor	Poor	Over mature	1 - 5	Low	N/a	Remove tree	Low

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
171	<i>Eucalyptus leucoxylon</i>	Yellow Gum	7	5	16	21	Fair	Good	Mature	25 - 50	Moderate	N/a	No action required	N/a
172	<i>Eucalyptus campaspe</i>	Silver Gimlet	5	3	25	32	Poor	Fair	Over mature	1 - 5	Low	N/a	Remove tree	Low
173	<i>Eucalyptus campaspe</i>	Silver Gimlet	8	5	25	29	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
174	<i>Eucalyptus campaspe</i>	Silver Gimlet	5	2	12	18	Very poor	Fair	Over mature	1 - 5	Low	N/a	Remove tree	Low
175	<i>Cupressus sempervirens</i>	Italian Cypress	5	1	15	17	Good	Good	Mature	25 - 50	Low	N/a	No action required	N/a
176	<i>Cupressus sempervirens</i>	Italian Cypress	6	1	15	17	Good	Good	Mature	25 - 50	Low	N/a	No action required	N/a
177	<i>Cupressus sempervirens</i>	Italian Cypress	6	1	15	17	Good	Good	Mature	25 - 50	Low	N/a	No action required	N/a
178	<i>Eucalyptus torquata</i>	Coral Gum	5	6	18	21	Good	Good	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
179	<i>Eucalyptus torwood</i>	Hybrid coral gum	6	6	25	26	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
180	<i>Eucalyptus torwood</i>	Hybrid coral gum	7	7	29	40	Good	Good	Mature	25 - 50	Moderate	N/a	Canopy lift	Low

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
181	<i>Eucalyptus albopurpurea</i>	Port Lincoln Mallee	6	8	25	55	Good	Good	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
182	<i>Eucalyptus</i> sp.	Gum	4	2	10	12	Dead	Poor	Over mature	0	Very low	N/a	Remove tree	Low
183	<i>Eucalyptus campaspe</i>	Silver Gimlet	3	2	18	22	Poor	Very Poor	Over mature	1 - 5	Very low	N/a	Remove tree	Low
184	<i>Eucalyptus torwood</i>	Hybrid coral gum	5	3	13	17	Poor	Fair	Semi Mature	15 - 25	Low	N/a	Deadwood > 25mm	Low
185	<i>Eucalyptus campaspe</i>	Silver Gimlet	6	5	23	32	Good	Fair	Mature	15 - 25	Moderate	N/a	Powerline clearance	Moderate
186	<i>Eucalyptus torquata</i>	Coral Gum	7	5	29	34	Fair	Fair	Mature	5 - 15	Moderate	N/a	Deadwood > 25mm	High
187	<i>Eucalyptus torquata</i>	Coral Gum	5	3	12	15	Poor	Fair	Mature	5 - 15	Low	N/a	No action required	N/a
188	<i>Eucalyptus leucoxydon</i>	Yellow Gum	8	7	28	37	Good	Good	Mature	> 50	High	N/a	No action required	N/a
189	<i>Eucalyptus torquata</i>	Coral Gum	9	7	36	42	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
190	<i>Eucalyptus gomphocephala</i>	Tuart	21	16	115	129	Fair	Fair	Mature	15 - 25	High	N/a	Deadwood > 25mm	High

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
191	<i>Eucalyptus torquata</i>	Coral Gum	6	9	26	32	Poor	Fair	Mature	25 - 50	Moderate	N/a	Deadwood > 25mm	High
192	<i>Eucalyptus campaspe</i>	Silver gimlet	7	5	19	23	Poor	Fair	Mature	15 - 25	Low	N/a	Deadwood > 25mm	Moderate
193	<i>Eucalyptus torquata</i>	Coral Gum	6	9	29	36	Fair	Good	Mature	25 - 50	Moderate	N/a	Deadwood > 25mm	High
194	<i>Eucalyptus gomphocephala</i>	Tuart	17	16	106	135	Poor	Poor	Over mature	1 - 5	High	N/a	Remove tree	High
195	<i>Eucalyptus torquata</i>	Coral Gum	6	7	25	27	Good	Good	Mature	25 - 50	High	N/a	Deadwood > 25mm	Moderate
196	<i>Eucalyptus gomphocephala</i>	Tuart	17	15	105	130	Poor	Poor	Over mature	1 - 5	High	N/a	Remove tree	High
197	<i>Eucalyptus torquata</i>	Coral Gum	6	7	15	17	Dead	Poor	Semi Mature	0	Very low	N/a	Remove tree	Moderate
198	<i>Eucalyptus torquata</i>	Coral Gum	7	7	31	33	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
199	<i>Eucalyptus torquata</i>	Coral Gum	10	10	33	35	Fair	Fair	Mature	25 - 50	Moderate	N/a	Deadwood > 25mm	High
200	<i>Eucalyptus porosa</i>	Box mallee	8	10	31	40	Fair	Fair	Mature	25 - 50	Moderate	N/a	Deadwood > 25mm	Moderate

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
201	<i>Eucalyptus sp.</i>	Gum	5	3	12	14	Dead	Poor	Semi Mature	0	Very low	N/a	Remove tree	Low
202	<i>Eucalyptus leucoxylon</i>	Yellow Gum	6	6	27	34	Fair	Good	Mature	> 50	Moderate	N/a	Deadwood > 25mm	Moderate
203	<i>Eucalyptus torquata</i>	Coral Gum	6	5	18	23	Poor	Fair	Mature	5 - 15	Low	N/a	Irrigate	Low
204	<i>Eucalyptus campaspe</i>	Silver gimlet	5	3	11	14	Poor	Fair	Over mature	1 - 5	Low	N/a	Irrigate	Low
205	<i>Eucalyptus campaspe</i>	Silver Gimlet	6	6	32	35	Good	Fair	Mature	15 - 25	Moderate	N/a	Canopy lift	Low
206	<i>Eucalyptus campaspe</i>	Silver Gimlet	5	2	11	13	Very poor	Poor	Over mature	0	Low	N/a	Remove tree	Moderate
207	<i>Eucalyptus torquata</i>	Coral Gum	8	8	32	34	Good	Good	Mature	> 50	Moderate	N/a	No action required	N/a
208	<i>Eucalyptus porosa</i>	Box mallee	10	14	53	71	Good	Fair	Mature	25 - 50	High	N/a	Canopy lift	Low
209	<i>Eucalyptus leucoxylon</i>	Yellow Gum	9	9	37	49	Good	Good	Mature	> 50	Moderate	N/a	No action required	N/a
210	<i>Eucalyptus brachycalyx</i>	Chindoo Mallee	6	8	17	30	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
211	<i>Eucalyptus sp.</i>	Gum	5	3	8	12	Very poor	Poor	Semi Mature	0	Very low	N/a	Remove tree	Low
212	<i>Eucalyptus campaspe</i>	Silver Gimlet	10	8	20	24	Fair	Good	Mature	> 50	Moderate	N/a	Deadwood > 25mm	Moderate
213	<i>Eucalyptus dundasii</i>	Dundas Blackbutt	14	12	43	51	Fair	Fair	Mature	5 - 15	High	N/a	Deadwood > 25mm	Moderate
214	<i>Eucalyptus torquata</i>	Coral Gum	8	6	25	22	Fair	Good	Mature	> 50	Moderate	N/a	Deadwood > 25mm	Moderate
215	<i>Eucalyptus torquata</i>	Coral Gum	10	10	40	53	Good	Fair	Mature	15 - 25	Moderate	N/a	Deadwood > 25mm	Moderate
216	<i>Eucalyptus salubris</i>	Gimlet	13	13	29	34	Good	Fair	Mature	25 - 50	Moderate	N/a	Deadwood > 25mm	Moderate
217	<i>Eucalyptus torquata</i>	Coral Gum	7	7	25	27	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
218	<i>Eucalyptus torquata</i>	Coral Gum	7	7	14	17	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
219	<i>Eucalyptus porosa</i>	Box mallee	6	6	26	31	Fair	Fair	Mature	15 - 25	Low	N/a	Canopy lift	Low
220	<i>Eucalyptus salubris</i>	Gimlet	8	7	21	25	Good	Good	Mature	25 - 50	Moderate	N/a	No action required	N/a

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
221	<i>Eucalyptus campaspe</i>	Silver Gimlet	7	5	21	26	Fair	Good	Mature	> 50	Moderate	N/a	Mulch	Low
222	<i>Eucalyptus campaspe</i>	Silver Gimlet	6	4	15	17	Dead	Poor	Mature	0	Very low	N/a	Remove tree	Moderate
223	<i>Eucalyptus brachycalyx</i>	Chindoo Mallee	4	5	35	50	Good	Fair	Mature	25 - 50	Moderate	N/a	Canopy lift	Low
224	<i>Eucalyptus sp.</i>	Gum	4	3	12	15	Dead	Poor	Semi Mature	0	Very low	N/a	Remove tree	Moderate
225	<i>Eucalyptus sp.</i>	Gum	3	3	9	10	Good	Fair	Immature	15 - 25	Low	N/a	No action required	N/a
226	<i>Eucalyptus sp.</i>	Gum	2	2	6	7	Good	Fair	Immature	15 - 25	Low	N/a	No action required	N/a
227	<i>Eucalyptus torquata</i>	Coral Gum	4	2	5	6	Dead	Poor	Over mature	0	Very low	N/a	Remove tree	Low
228	<i>Eucalyptus leucoxydon</i>	Yellow Gum	7	7	22	37	Fair	Fair	Mature	5 - 15	Low	N/a	Deadwood > 25mm	High
229	<i>Eucalyptus sp.</i>	Gum	4	2	15	17	Dead	Poor	Over mature	0	Very low	N/a	Remove tree	Low
230	<i>Eucalyptus campaspe</i>	Silver Gimlet	8	9	27	32	Fair	Good	Mature	> 50	Moderate	N/a	Mulch	Low

ID	Botanical Name	Common Name	Height	Width	DBH	DAB	Health	Structure	Maturity	ULE (years)	Value	Risk Score	WorksReq	Priority
231	<i>Eucalyptus leucoxylon</i>	Yellow Gum	6	3	11	15	Dead	Poor	Semi Mature	0	Very low	N/a	Remove tree	Moderate
232	<i>Eucalyptus torwood</i>	Hybrid Coral Gum	6	5	23	29	Fair	Fair	Mature	5 - 15	Moderate	N/a	Powerline clearance	Moderate
233	<i>Eucalyptus torwood</i>	Hybrid Coral Gum	6	4	18	23	Very poor	Fair	Semi Mature	1 - 5	Low	N/a	No action required	N/a
394	<i>Eucalyptus gomphocephala</i>	Tuart	18	16	64	75	Good	Good	Mature	25 - 50	High	1:619200	Weight reduce	Moderate
395	<i>Eucalyptus gomphocephala</i>	Tuart	16	7	83	85	Fair	Fair	Mature	25 - 50	High	1:619200	Deadwood > 25mm	High

14. Appendix 2: Tree Data Cards

Note: Where **Retention value** = "**Remove**" only the arboricultural attributes of the tree (i.e. health, structure and ULE) are considered. Other factors that may affect the decision to retain or remove the tree are not considered.

- The following information should be read in conjunction with the '**Explanation of Terms**' and the '**Glossary / Notes**' sections found later in this report.

SRZ (m): AS 4970-2009 Protection of trees on development sites (Radius

TPZ (m): AS 4970-2009 Protection of trees on development sites (Radius).

Risk Score

Total Number of trees 94

The risk score system used in this report uses the methodology proposed by Ellison (2007). This system is probabilistic and the risk score is expressed as a ratio or fraction of 1. Therefore the higher the "risk score" the lower the risk (e.g. 1:50,000 indicates a lower level of risk than 1:15,000. Ellison proposes a risk score threshold of 1:10,000 and suggests that further action is required for risks greater than 1:10,000 per year (i.e. between 1:1 and 1:10,000). The required actions may be further investigation or other action to actually reduce the risk posed by the tree and will generally be detailed under Works Required.

Tree ID: 129

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 18	Structure: Poor
Width (m): 9	Health: Dead
DBH (cm): 59 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Low	Form: Poor
	Dormancy: Evergreen

Works Required: **Recommendation:** Remove

Remove tree

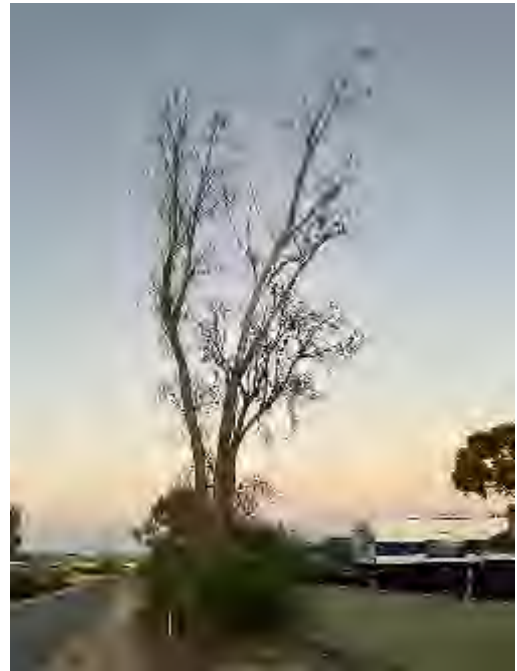
Priority: Very High

SRZ (m): 2.8

TPZ (m): 7.1

Risk Score Values: **Risk Score:** 1: 17200

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.1% - 1% 1/100 (100).

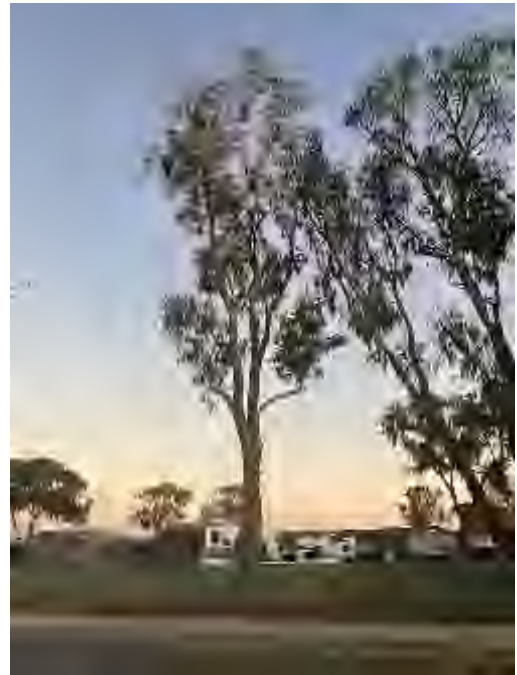


Tree ID: 130

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 21	Structure: Poor
Width (m): 11	Health: Very poor
DBH (cm): 55 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Moderate	Form: Poor
Works Required: Irrigate	Dormancy: Evergreen
Priority: High	Recommendation: Retain.



SRZ (m): 2.6

TPZ (m): 6.6

Risk Score Values: Risk Score: 1: 172000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

Tree ID: 131

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 18	Structure: Poor
Width (m): 15	Health: Very poor
DBH (cm): 89 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Moderate	Form: Poor
Works Required: Irrigate	Dormancy: Evergreen
Priority: High	Recommendation: Retain.



SRZ (m): 3.2

TPZ (m): 10.7

Risk Score Values: Risk Score: 1: 172000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

Tree ID: 132

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 18	Structure: Poor
Width (m): 9	Health: Very poor
DBH (cm): 61 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Moderate	Form: Poor
Works Required: Irrigate	Dormancy: Evergreen
Priority: High	Recommendation: Retain.



SRZ (m): 3.0
TPZ (m): 7.3

Risk Score Values: Risk Score: 1: 172000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

Tree ID: 133

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 17	Structure: Poor
Width (m): 15	Health: Poor
DBH (cm): 82 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 15 - 25
Amenity value: Moderate	Form: Fair
Works Required:	Dormancy: Evergreen
Structural prune	Recommendation: Retain.
Priority: Very High	



SRZ (m): 3.4
TPZ (m): 9.8

Risk Score Values: Risk Score: 1: 40

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 25cm - 45cm 1/2 (2). Failure potential = 10% - 100% 1/1 (1).

Tree ID: 136

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 17	Structure: Fair
Width (m): 8	Health: Very poor
DBH (cm): 45 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Good
Works Required:	Dormancy: Evergreen
Remove tree	Recommendation:
Priority: High	Remove.

SRZ (m): 2.5

TPZ (m): 5.4



Risk Score Values: Risk Score: 1: 172000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

Tree ID: 137

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 16	Structure: Fair
Width (m): 13	Health: Good
DBH (cm): 84 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: High	Form: Good
Works Required:	Dormancy: Evergreen
Weight reduce	Recommendation: Retain.
Priority: Moderate	

SRZ (m): 3.3

TPZ (m): 10.1



Risk Score Values: Risk Score: 1: 1720000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.001% - 0.01% 1/10,000 (10000).

Tree ID: 138

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 15	Structure: Hazardous
Width (m): 6	Health: Very poor
DBH (cm): 39 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Poor

Works Required:

Remove tree

Priority: Very High

Dormancy: Evergreen

Recommendation:

Remove.

SRZ (m): 2.6

TPZ (m): 4.7

Risk Score Values: Risk Score: 1: 40000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 25cm - 45cm 1/2 (2). Failure potential = 0.01% - 0.1% 1/1,000 (1000).



Tree ID: 139

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 15	Structure: Fair
Width (m): 13	Health: Good
DBH (cm): 75 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: High	Form: Good

Works Required:

Weight reduce

Priority:High

Dormancy: Evergreen

Recommendation:

Retain

SRZ (m): 3.0

TPZ (m): 9.0

Risk Score Values: Risk Score: 1: 1720000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.001% - 0.01% 1/10,000 (10000).



Tree ID: 140

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 16 **Structure:** Fair

Width (m): 11 **Health:** Good

DBH (cm): 50 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: High **Form:** Good

Works Required: Weight **Dormancy:** Evergreen

Reduce **Recommendation:** Retain.

Priority: High

SRZ (m): 2.7

TPZ (m): 6.0

Risk Score Values: **Risk Score: 1:** 1720000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.001% - 0.01% 1/10,000 (10000).



Tree ID: 141

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 16 **Structure:** Hazardous

Width (m): 21 **Health:** Very poor

DBH (cm): 105 Measured **Maturity:** Overmature

Origin: Australian **ULE (years):** 1 - 5

Amenity value: Low **Form:** Poor

Works Required: **Dormancy:** Evergreen

Remove tree **Recommendation:**

Priority: Very High

SRZ (m): 3.8

TPZ (m): 12.6

Risk Score Values: **Risk Score: 1:** 40000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 25cm - 45cm 1/2 (2). Failure potential = 0.01% - 0.1% 1/1,000 (1000).



Tree ID: 142

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 16	Structure: Hazardous
Width (m): 21	Health: Very poor
DBH (cm): 105 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Poor
	Dormancy: Evergreen

Works Required:

Remove tree

Priority: Very High

Recommendation:

Remove.

SRZ (m): 3.8 TPZ

(m): 12.6

Risk Score Values: Risk Score: 1: 40000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 25cm - 45cm 1/2 (2). Failure potential = 0.01% - 0.1% 1/1,000 (1000).



Tree ID: 144

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 12	Structure: Poor
Width (m): 12	Health: Poor
DBH (cm): 100 Measured	Maturity: Mature
Origin: Australian	ULE (years): 15 - 25
Amenity value: Low	Form: Fair
	Dormancy: Evergreen

Works Required:

Weight reduce

Priority: Moderate

Recommendation: Retain.

SRZ (m): 3.6 TPZ

(m): 12.0

Risk Score Values: Risk Score: 1: 5904000

Occupancy = Property-\$2,200 - \$22,000. Pedestrians ->1 per hour - 10 per hour. Road-363 vehicles @ 110kph; 449 vehicles @ 80kph; 649 vehicles @ 50kph: 1/72 (72). Failure Size = 2.5cm - 10cm 1/82 (82). Failure potential = 0.01% - 0.1% 1/1,000 (1000).



Tree ID: 150

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 14	Structure: Poor
Width (m): 10	Health: Dead
DBH (cm): 74 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Low	Form: Fair
	Dormancy: Evergreen

Works Required:

Remove tree

Priority: Very High

SRZ (m): 3.4

TPZ (m): 8.9

Recommendation:

Remove



Risk Score Values: Risk Score: 1: 164000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 2.5cm - 10cm 1/82 (82). Failure potential = 0.1% - 1% 1/100 (100).

Tree ID: 151

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 16	Structure: Very Poor
Width (m): 21	Health: Poor
DBH (cm): 127 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Good
	Dormancy: Evergreen

Works Required:

Remove tree

Priority: Very High

SRZ (m): 3.8

TPZ (m): 15.0

Recommendation:

Remove



Risk Score Values: Risk Score: 1: 40000

Occupancy = Property-\$22,000 - \$80,000. Pedestrians->10 per hour - 36 per hour. Road-1,305 vehicles @ 110kph; 1,617 vehicles @ 80kph; 2,335 vehicles @ 50kph: 1/20 (20). Failure Size = 25cm - 45cm 1/2 (2). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

Tree ID: 157

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 6 **Structure:** Poor

Width (m): 4 **Health:** Good

DBH (cm): 20 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Low **Form:** Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Formative prune,

Irrigate

Priority: High

SRZ (m): 1.9

TPZ (m): 2.4



Tree ID: 158

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 5 **Structure:** Fair

Width (m): 5 **Health:** Good

DBH (cm): 18 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Low **Form:** Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Irrigate

Priority: High

SRZ (m): 1.7

TPZ (m): 2.2



Tree ID: 159

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 7 **Structure:** Good

Width (m): 8 **Health:** Fair

DBH (cm): 20 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required: Mulch

Recommendation: Retain.

Priority: High

SRZ (m): 1.8

TPZ (m): 2.4



Tree ID: 160

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 5 **Structure:** Fair

Width (m): 6 **Health:** Good

DBH (cm): 21 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Moderate

SRZ (m): 1.8

TPZ (m): 2.5



Tree ID: 161

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 7 **Structure:** Good

Width (m): 6 **Health:** Fair

DBH (cm): 18 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 1.7

TPZ (m): 2.2



Tree ID: 162

Genus / species: *Eucalyptus spathulata*

Common name: Swamp Mallet

Height (m): 5 **Structure:** Good

Width (m): 4 **Health:** Good

DBH (cm): 24 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Low **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.8

TPZ (m): 2.9



Tree ID: 163

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 7 **Structure:** Good

Width (m): 6 **Health:** Fair

DBH (cm): 15 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: Moderate

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: 164

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 7 **Structure:** Good

Width (m): 6 **Health:** Good

DBH (cm): 16 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 1.7

TPZ (m): 2.0



Tree ID: **165**

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 6

Structure: Good

Width (m): 5

Health: Good

DBH (cm): 22 Measured

Maturity: Mature

Origin: Australian

ULE (years): 25 - 50

Amenity value: Moderate

Form: Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Low

SRZ (m): 1.9

TPZ (m): 2.6



Tree ID: **166**

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 6

Structure: Good

Width (m): 5

Health: Good

DBH (cm): 18 Measured

Maturity: Mature

Origin: Australian

ULE (years): 25 - 50

Amenity value: Moderate

Form: Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.8

TPZ (m): 2.2



Tree ID: 167

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 6	Structure: Fair
Width (m): 6	Health: Good
DBH (cm): 30 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Canopy lift

Priority: Low

SRZ (m): 2.2

TPZ (m): 3.6

Dormancy: Evergreen
Recommendation: Retain.



Tree ID: 168

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 5	Structure: Fair
Width (m): 4	Health: Good
DBH (cm): 26 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

No action required

SRZ (m): 1.9

TPZ (m): 3.1

Dormancy: Evergreen
Recommendation: Retain.



Tree ID: 169

Genus / species: *Pinus halepensis*

Common name: Aleppo Pine

Height (m): 11 **Structure:** Good

Width (m): 8 **Health:** Good

DBH (cm): 32 Measured **Maturity:** Mature

Origin: Exotic **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Low

SRZ (m): 2.3

TPZ (m): 3.8



Tree ID: 170

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 5 **Structure:** Poor

Width (m): 3 **Health:** Very poor

DBH (cm): 21 Measured **Maturity:** Overmature

Origin: Australian **ULE (years):** 1 - 5

Amenity value: Low **Form:** Poor

Dormancy: Evergreen

Works Required:

Recommendation:

Tree remove

Remove

Priority: Low

SRZ (m): 1.7

TPZ (m): 2.5



Tree ID: **171**

Genus / species: *Eucalyptus leucoxylon*

Common name: Yellow Gum

Height (m): 7 **Structure:** Good

Width (m): 5 **Health:** Fair

DBH (cm): 16 Measured **Maturity:** Mature

Origin: Melbourne **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

No action required

SRZ (m): 1.7

TPZ (m): 2.0



Tree ID: **172**

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 5 **Structure:** Fair

Width (m): 3 **Health:** Poor

DBH (cm): 25 Measured **Maturity:** Overmature

Origin: Australian **ULE (years):** 1 - 5

Amenity value: Low **Form:** Good

Dormancy: Evergreen

Recommendation:

Works Required:

Remove tree

Remove

Priority: Low

SRZ (m): 2.1

TPZ (m): 3.0



Tree ID: **173**

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 8	Structure: Fair
Width (m): 5	Health: Good
DBH (cm): 25 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Canopy lift

Dormancy: Evergreen

Recommendation: Retain.

Priority: Low

SRZ (m): 2.0

TPZ (m): 3.0



Tree ID: **174**

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 5	Structure: Fair
Width (m): 2	Health: Very poor
DBH (cm): 12 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Fair

Works Required:

Remove tree

Dormancy: Evergreen

Recommendation:

Remove

Priority: Low

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: **175**

Genus / species: *Cupressus sempervirens*

Common name: Italian Cypress

Height (m): 5 **Structure:** Good

Width (m): 1 **Health:** Good

DBH (cm): 15 Measured **Maturity:** Mature

Origin: Exotic **ULE (years):** 25 - 50

Amenity value: Low **Form:** Good

Works Required: **Dormancy:** Evergreen

Recommendation: Retain.

No action required

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: **176**

Genus / species: *Cupressus sempervirens*

Common name: Italian Cypress

Height (m): 6 **Structure:** Good

Width (m): 1 **Health:** Good

DBH (cm): 15 Measured **Maturity:** Mature

Origin: Exotic **ULE (years):** 25 - 50

Amenity value: Low **Form:** Good

Works Required: **Dormancy:** Evergreen

Recommendation: Retain.

No action required

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: **177**

Genus / species: *Cupressus sempervirens*

Common name: Italian Cypress

Height (m): 6 **Structure:** Good

Width (m): 1 **Health:** Good

DBH (cm): 15 Measured **Maturity:** Mature

Origin: Exotic **ULE (years):** 25 - 50

Amenity value: Low **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: **178**

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 5 **Structure:** Good

Width (m): 6 **Health:** Good

DBH (cm): 18 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Low

SRZ (m): 1.7

TPZ (m): 2.2



Tree ID: 179

Species: *Eucalyptus* 'Torwood'

Common name: Hybrid coral gum

Height (m): 6	Structure: Fair
Width (m): 6	Health: Good
DBH (cm): 25 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Canopy lift

Priority: Low

SRZ (m): 1.9

TPZ (m): 3.0



Tree ID: 180

Species: *Eucalyptus* 'Torwood'

Common name: Hybrid coral gum

Height (m): 7	Structure: Good
Width (m): 7	Health: Good
DBH (cm): 29 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Canopy lift

Priority: Low

SRZ (m): 2.3

TPZ (m): 3.5



Tree ID: 181

Species: *Eucalyptus albopurpurea*

Common name: Port Lincoln mallee

Height (m): 6	Structure: Good
Width (m): 8	Health: Good
DBH (cm): 25 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Canopy lift

Priority: Low

SRZ (m): 2.6

TPZ (m): 3.0

Dormancy: Evergreen
Recommendation: Retain.



Tree ID: 182

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 4	Structure: Poor
Width (m): 2	Health: Dead
DBH (cm): 10 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Very low	Form: Fair

Works Required:

Remove tree

Priority: Low

SRZ (m): 1.5

TPZ (m): 2.0

Dormancy: Evergreen
Recommendation: Remove.



Tree ID: 183

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 3	Structure: Very Poor
Width (m): 2	Health: Poor
DBH (cm): 18 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Very low	Form: Poor
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove

Priority: Low

SRZ (m): 1.8

TPZ (m): 2.2



Tree ID: 184

Genus / species: *Eucalyptus* Torwood

Common name: Coral gum hybrid

Height (m): 5	Structure: Fair
Width (m): 3	Health: Poor
DBH (cm): 13 Measured	Maturity: Semi Mature
Origin: Australian	ULE (years): 15 - 25
Amenity value: Low	Form: Fair
	Dormancy: Evergreen
Works Required:	Recommendation: Retain.
Deadwood > 25mm	

Priority: Low

SRZ (m): 1.6 **TPZ**

(m): 2.0



Tree ID: 185

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 6 **Structure:** Fair

Width (m): 5 **Health:** Good

DBH (cm): 23 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Moderate **Form:** Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Powerline clearance

Priority: Moderate

SRZ (m): 2.1

TPZ (m): 2.8



Tree ID: 186

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 7 **Structure:** Fair

Width (m): 5 **Health:** Fair

DBH (cm): 29 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 5 - 15

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 2.1

TPZ (m): 3.5



Tree ID: **187**

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 5 **Structure:** Fair

Width (m): 3 **Health:** Poor

DBH (cm): 12 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 5 - 15

Amenity value: Low **Form:** Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: **188**

Genus / species: *Eucalyptus leucoxyton*

Common name: Yellow Gum

Height (m): 8 **Structure:** Good

Width (m): 7 **Health:** Good

DBH (cm): 28 Measured **Maturity:** Mature

Origin: Melbourne **ULE (years):** > 50

Amenity value: High **Form:** Good

Dormancy: Evergreen

Priority High

Recommendation: Retain.

Works Required:

No action required

SRZ (m): 2.2

TPZ (m): 3.4



Tree ID: 189

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 9 **Structure:** Fair

Width (m): 7 **Health:** Good

DBH (cm): 36 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Low

SRZ (m): 2.3

TPZ (m): 4.3



Tree ID: 190

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 21 **Structure:** Fair

Width (m): 16 **Health:** Fair

DBH (cm): 115 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: High **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 3.7

TPZ (m): 13.8



Tree ID: 191

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 6	Structure: Fair
Width (m): 9	Health: Poor
DBH (cm): 26 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Fair

Works Required:

Deadwood > 25mm

Dormancy: Evergreen

Recommendation: Retain.

Priority: High

SRZ (m): 2.1

TPZ (m): 3.1



Tree ID: 192

Genus / species: *Eucalyptus campaspe*

Common name: Silver gimlet

Height (m): 7	Structure: Fair
Width (m): 5	Health: Poor
DBH (cm): 19 Measured	Maturity: Mature
Origin: Australian	ULE (years): 15 - 25
Amenity value: Low	Form: Fair

Works Required:

Deadwood > 25mm

Dormancy: Evergreen

Recommendation: Retain.

Priority: Moderate

SRZ (m): 1.8

TPZ (m): 2.3



Tree ID: 195

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 6 **Structure:** Good

Width (m): 7 **Health:** Good

DBH (cm): 25 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: High **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: Moderate

SRZ (m): 1.9

TPZ (m): 3.0



Tree ID: 196

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 17 **Structure:** Poor

Width (m): 15 **Health:** Poor

DBH (cm): 105 Estimate **Maturity:** Overmature

Origin: Australian **ULE (years):** 1 - 5

Amenity value: High **Form:** Poor

Dormancy: Evergreen

Works Required:

Recommendation:

Remove tree

Remove.

Priority: High

SRZ (m): 3.7

TPZ (m): 12.6



Tree ID: 197

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 6	Structure: Poor
Width (m): 7	Health: Dead
DBH (cm): 15 Measured	Maturity: Semi Mature
Origin: Australian	ULE (years): 0
Amenity value: Low	Form: Fair
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove

Priority: Moderate

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: 198

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 7	Structure: Fair
Width (m): 7	Health: Good
DBH (cm): 31 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good
	Dormancy: Evergreen
Works Required:	Recommendation: Retain.
Canopy lift	

Priority: Low

SRZ (m): 2.1

TPZ (m): 3.7



Tree ID: 199

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 10 **Structure:** Fair

Width (m): 10 **Health:** Fair

DBH (cm): 33 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 2.1

TPZ (m): 4.0



Tree ID: 200

Genus / species: *Eucalyptus porosa*

Common name: Mallee box

Height (m): 8 **Structure:** Fair

Width (m): 10 **Health:** Fair

DBH (cm): 31 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Deadwood > 25mm

Priority: Moderate

SRZ (m): 2.3

TPZ (m): 3.7



Tree ID: 201

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 5	Structure: Poor
Width (m): 3	Health: Dead
DBH (cm): 12 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Low	Form: Poor
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove

Priority: Low

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: 202

Genus / species: *Eucalyptus leucoxylon*

Common name: Yellow Gum

Height (m): 6	Structure: Good
Width (m): 6	Health: Fair
DBH (cm): 27 Measured	Maturity: Mature
Origin: Melbourne	ULE (years): > 50
Amenity value: Moderate	Form: Good
	Dormancy: Evergreen
Works Required:	Recommendation: Retain.

Deadwood > 25mm

Priority: Moderate

SRZ (m): 2.1

TPZ (m): 3.2



Tree ID: 203

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 6	Structure: Fair
Width (m): 5	Health: Poor
DBH (cm): 18 Measured	Maturity: Mature
Origin: Australian	ULE (years): 5 - 15
Amenity value: Low	Form: Poor

Works Required:

Irrigate

Priority: Low

SRZ (m): 1.8

TPZ (m): 2.2



Tree ID: 204

Species: *Eucalyptus campaspe*

Common name: Silver gimlet

Height (m): 5	Structure: Fair
Width (m): 3	Health: Poor
DBH (cm): 11 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 1 - 5
Amenity value: Low	Form: Poor

Works Required:

Irrigate

Priority: Low

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: 207

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 8 **Structure:** Good

Width (m): 8 **Health:** Good

DBH (cm): 32 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** > 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

No action required

SRZ (m): 2.1

TPZ (m): 3.8



Tree ID: 208

Genus / species: *Eucalyptus porosa*

Common name: Box mallee

Height (m): 10 **Structure:** Fair

Width (m): 14 **Health:** Good

DBH (cm): 53 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: High **Form:** Fair

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

Canopy lift

Priority: Low

SRZ (m): 2.9

TPZ (m): 6.4



Tree ID: 209

Genus / species: *Eucalyptus leucoxylon*

Common name: Yellow Gum

Height (m): 9 **Structure:** Good

Width (m): 9 **Health:** Good

DBH (cm): 37 Measured **Maturity:** Mature

Origin: Melbourne **ULE (years):** > 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

No action required

SRZ (m): 2.5

TPZ (m): 4.4



Tree ID: 210

Genus /species: *Eucalyptus brachycalyx*

Common name: Chindoo mallee

Height (m): 6 **Structure:** Fair

Width (m): 8 **Health:** Good

DBH (cm): 17 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Fair

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

Canopy lift

Priority: Low

SRZ (m): 2.0

TPZ (m): 2.0



Tree ID: 211

Genus/Species: *Eucalyptus sp.*

Common name: Gum

Height (m): 5	Structure: Poor
Width (m): 3	Health: Very poor
DBH (cm): 8 Measured	Maturity: Semi Mature
Origin: Australian	ULE (years): 0
Amenity value: Very low	Form: Poor

Works Required:

Remove tree

Dormancy: Evergreen

Recommendation:

Remove.

Priority: Low

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: 212

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 10	Structure: Good
Width (m): 8	Health: Fair
DBH (cm): 20 Measured	Maturity: Mature
Origin: Australian	ULE (years): > 50
Amenity value: Moderate	Form: Good

Works Required:

Deadwood > 25mm

Dormancy: Evergreen

Recommendation: Retain.

Priority: Moderate

SRZ (m): 1.8

TPZ (m): 2.4



Tree ID: 213

Genus / species: *Eucalyptus dundasii*

Common name: Dundas Blackbutt

Height (m): 14	Structure: Fair
Width (m): 12	Health: Fair
DBH (cm): 43 Measured	Maturity: Mature
Origin: Australian	ULE (years): 5 - 15
Amenity value: High	Form: Good

Works Required:	Dormancy: Evergreen
Deadwood > 25mm	Recommendation: Retain.

Priority: Moderate

SRZ (m): 2.5
TPZ (m): 5.2



Tree ID: 214

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 8	Structure: Good
Width (m): 6	Health: Fair
DBH (cm): 25 Measured	Maturity: Mature
Origin: Australian	ULE (years): > 50
Amenity value: Moderate	Form: Good

Works Required:	Dormancy: Evergreen
Deadwood > 25mm	Recommendation: Retain.

Priority: Moderate

SRZ (m): 1.8
TPZ (m): 3.0



Tree ID: 215

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 10	Structure: Fair
Width (m): 10	Health: Good
DBH (cm): 40 Measured	Maturity: Mature
Origin: Australian	ULE (years): 15 - 25
Amenity value: Moderate	Form: Good

Works Required:

Deadwood > 25mm

Priority: Moderate

SRZ (m): 2.5

TPZ (m): 4.8

Dormancy: Evergreen

Recommendation: Retain.



Tree ID: 216

Genus /species: *Eucalyptus salubris*

Common name: Gimlet

Height (m): 13	Structure: Fair
Width (m): 13	Health: Good
DBH (cm): 29 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: Moderate	Form: Good

Works Required:

Deadwood > 25mm

Priority: Moderate

SRZ (m): 2.1

TPZ (m): 3.5

Dormancy: Evergreen

Recommendation: Retain.



Tree ID: 217

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 7 **Structure:** Fair

Width (m): 7 **Health:** Good

DBH (cm): 25 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Works Required: Canopy lift **Dormancy:** Evergreen

Recommendation: Retain.

Priority: Low

SRZ (m): 1.9

TPZ (m): 3.0



Tree ID: 218

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 7 **Structure:** Fair

Width (m): 7 **Health:** Good

DBH (cm): 14 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Priority High **Dormancy:** Evergreen

Recommendation: Retain.

Works Required:

Canopy lift

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: 219

Genus /species: *Eucalyptus porosa*

Common name: Box mallee

Height (m): 6 **Structure:** Fair

Width (m): 6 **Health:** Fair

DBH (cm): 26 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 15 - 25

Amenity value: Low **Form:** Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

Canopy lift

Priority: Low

SRZ (m): 2.0

TPZ (m): 3.1



Tree ID: 220

Genus /species: *Eucalyptus salubris*

Common name: Gimlet

Height (m): 8 **Structure:** Good

Width (m): 7 **Health:** Good

DBH (cm): 21 Measured **Maturity:** Mature

Origin: Australian **ULE (years):** 25 - 50

Amenity value: Moderate **Form:** Good

Dormancy: Evergreen

Recommendation: Retain.

Works Required:

No action required

SRZ (m): 1.8

TPZ (m): 2.5



Tree ID: 225

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 3

Structure: Fair

Width (m): 3

Health: Good

DBH (cm): 9 Measured

Maturity: Immature

Origin: Australian

ULE (years): 15 - 25

Amenity value: Low

Form: Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: 226

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 2

Structure: Fair

Width (m): 2

Health: Good

DBH (cm): 6 Measured

Maturity: Immature

Origin: Australian

ULE (years): 15 - 25

Amenity value: Low

Form: Fair

Dormancy: Evergreen

Works Required:

Recommendation: Retain.

No action required

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: **227**

Genus / species: *Eucalyptus torquata*

Common name: Coral Gum

Height (m): 4	Structure: Poor
Width (m): 2	Health: Dead
DBH (cm): 5 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Very low	Form: Good
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove

Priority: Low

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: **228**

Genus / species: *Eucalyptus leucoxylon*

Common name: Yellow Gum

Height (m): 7	Structure: Fair
Width (m): 7	Health: Fair
DBH (cm): 22 Measured	Maturity: Mature
Origin: Melbourne	ULE (years): 5 - 15
Amenity value: Low	Form: Good
	Dormancy: Evergreen
Works Required:	Recommendation: Retain.

Deadwood > 25mm

Priority: High

SRZ (m): 2.2

TPZ (m): 2.6



Tree ID: 229

Genus / species: *Eucalyptus sp.*

Common name: Gum

Height (m): 4	Structure: Poor
Width (m): 2	Health: Dead
DBH (cm): 15 Measured	Maturity: Overmature
Origin: Australian	ULE (years): 0
Amenity value: Very low	Form: Very Poor
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove.

Priority: Low

SRZ (m): 1.6

TPZ (m): 2.0



Tree ID: 230

Genus / species: *Eucalyptus campaspe*

Common name: Silver Gimlet

Height (m): 8	Structure: Good
Width (m): 9	Health: Fair
DBH (cm): 27 Measured	Maturity: Mature
Origin: Australian	ULE (years): > 50
Amenity value: Moderate	Form: Good
	Dormancy: Evergreen
Works Required: Mulch	Recommendation: Retain.

Priority: Low

SRZ (m): 2.1

TPZ (m): 3.2



Tree ID: 231

Genus / species: *Eucalyptus leucoxyton*

Common name: Yellow Gum

Height (m): 6	Structure: Poor
Width (m): 3	Health: Dead
DBH (cm): 11 Measured	Maturity: Semi Mature
Origin: Melbourne	ULE (years): 0
Amenity value: Low	Form: Good
	Dormancy: Evergreen
Works Required:	Recommendation:
Remove tree	Remove

Priority: Moderate

SRZ (m): 1.5

TPZ (m): 2.0



Tree ID: 232

Genus /species: *Eucalyptus* Torwood

Common name: Hybrid coral gum

Height (m): 6	Structure: Fair
Width (m): 5	Health: Fair
DBH (cm): 23 Measured	Maturity: Mature
Origin: Australian	ULE (years): 5 - 15
Amenity value: Moderate	Form: Fair
	Dormancy: Evergreen
Works Required:	Recommendation: Retain.
Powerline clearance	

Priority: Moderate

SRZ (m): 2.0

TPZ (m): 2.5



Tree ID: 233

Genus / species: *Eucalyptus* Torwood

Common name: Hybrid coral gum

Height (m): 6	Structure: Fair
Width (m): 4	Health: Very poor
DBH (cm): 18 Measured	Maturity: Semi Mature
Origin: Australian	ULE (years): 0
Amenity value: Low	Form: Good
Works Required:	Dormancy: Evergreen
No action required	Recommendation: Retain.



SRZ (m): 1.8

TPZ (m): 2.0

Tree ID: 394

Genus / species: *Eucalyptus gomphocephala*

Common name: Tuart

Height (m): 18	Structure: Good
Width (m): 16	Health: Good
DBH (cm): 64 Measured	Maturity: Mature
Origin: Australian	ULE (years): 25 - 50
Amenity value: High	Form:
Works Required:	Dormancy: Evergreen
Weight reduce	Recommendation: Retain.



Works Required:

Weight reduce

Priority: Moderate

SRZ (m): 2.9

TPZ (m): 7.7

Risk Score Values: Risk Score: 1: 619200

Occupancy = Property-\$2,200 - \$22,000. Pedestrians ->1 per hour - 10 per hour. Road-363 vehicles @ 110kph; 449 vehicles @ 80kph; 649 vehicles @ 50kph: 1/72 (72). Failure Size = 10cm - 25cm 1/8.6 (8.6). Failure potential = 0.01% - 0.1% 1/1,000 (1000).

15. Appendix 3: Description of terms and ratings

15.1. Tabulated field data

The following data is provided for each tree:

1. **ID** – Autogenerated number unique to each tree. Please note that numbering is not consecutive on plans and is provided as a unique identifier for each tree only.
2. **Genus / species** – Identification of the genus / species on site based on accessible visual characteristics. Given that key identify features are often not available at the time of inspection the accuracy of identification is not guaranteed.
3. **Common name** – Commonly accepted name used for each tree. Please note that common names can be used to describe several different genus and species and therefore the use of Genus / Species is the most accurate manner to communicate tree identification.
4. **Height** -Provided in m as estimated on site.
5. **Width** – Provided in meters as an estimated canopy diameter.
7. **DBH** - Diameter at breast height measured at 1.4 metres. This has been measured unless stated.
8. **Measured** - States whether the DBH has been measured or estimated. DBH has been estimated where clear access to a tree was not possible either due to dense undergrowth or the tree being in private property.
9. **Health** – The health of the tree as per the descriptors provided in Section 10.4.2– Arboricultural information of this report.
10. **Structure** – The structure of the tree as per the descriptors provided in Section 10.4.3 Appendix 3 – Arboricultural information of this report.
11. **U.L.E.** – Useful life expectancy as per the descriptors provided in Section 10.4.4. Arboricultural information of this report.
12. **Maturity** – The maturity of the tree as per the descriptors provided in Section 10.4.1 Arboricultural information of this report.
13. **Form** – The form of the tree as per the descriptors provided in Section 10.4.5 Arboricultural information of this report.
14. **SRZ** – Structural Root Zone calculated as per *AS 4970 – 2009 Protection of trees on development sites*. Provided as a radius from stem centre in metres.
15. **TPZ** – Tree Protection Zone calculated as per *AS 4970 – 2009 Protection of trees on development sites*. Provided as a radius from stem centre in metres.
16. **Value** – The value of a tree based on both U.L.E. & Amenity value
17. **Recommendation** – Remove, retain, potentially retain, potentially remove.
18. **Works required** per the descriptors provided in Section 10.4.6 Arboricultural information of this report.
19. **Priority** per the descriptors provided in Section 10.4.7 Arboricultural information of this report

15.2. Arboricultural information

The following sections are presented to provide an introduction to the process of tree root system protection. A tree's root system is the critical element to be protected during the development process and if the tree's roots are adequately protected then the rest of the tree will generally survive without significant injury.

15.2.1. Root plate estimation

One of the primary purposes of this report is to estimate the impact of the development on the trees on this site. This is mainly achieved by estimating the extent of the root plate area of the trees that are proposed to be retained and the proportion of this area that is likely to be excised or affected during the construction process.

In this report two elements of the tree root area are described. These are:

- *Structural Root Zone*

This is an estimate of the radius that is likely to encompass the major scaffold roots of the tree. These roots are critical to anchoring the tree and damage to these roots will increase the risk of entire tree failure (i.e. uprooting). This radius is based on AS 4970-2009.

- *Tree Protection Zone*

This is an estimate of the radius that is likely to encompass enough of the smaller absorbing roots to allow the tree to obtain sufficient nutrients and water to allow it to survive in the long term. This radius is based on AS 4970-2009 and is based on the size of the tree.

Estimation of the likely root plate radius for both methods are based on the DBH (Diameter at Breast Height) of each tree. This is usually measured but where the tree is inaccessible or has numerous trunks a visual estimation may be used. Whether the DBH is estimated or measured is noted within the "Tree Data" section of the report.

The two elements of each tree's root zone is transposed over the site survey and building footprint and the degree of root injury is calculated from this.

15.2.2. Tree rooting patterns

Contrary to common belief, trees usually have a broad flat plate of roots that may extend 1.5 – 3 times the radius of the canopy (Harris, Matheny & Clark, 1999; Coder, 1996; Hitchmough, 1994). Relatively few trees have deep roots and Harris, Matheny and Clark (2004) note that most tree roots will be found in the top 1.0 metre of the soil profile.

While the models used to approximate the size of tree root plates assume a uniformly radial root system, in highly disturbed urban soils root systems often develop in a highly asymmetric manner (Matheny & Clarke, 2004). This may require the modification of the models used where it is likely that the root system is asymmetric.

15.2.3. Construction impacts

Construction in the vicinity of trees can have several negative impacts on their health, longevity and structural stability. Harris, Matheny and Clark (2004) note that some level of tree root injury or root zone change is almost inevitable during construction around trees and maintain that the goal of tree preservation is to reduce the injury or change to a level that will enable the long-term preservation of the retained trees.

Negative impacts can include:

- Root severance from trenching and grading activities. Damage to the transport and absorbing root system may deprive the tree of the ability to absorb nutrients and water and damage to the structural scaffold roots that support the tree may result in instability and uprooting. Depending on the percentage of the root plate affected and proximity to the tree, the affects can range from minor degradation of health through to total root plate failure (i.e. uprooting).
- Compaction and root injury. Most trees require a well aerated and friable soil to allow normal physiological processes to occur and to allow root growth. Soil compaction from pedestrian or vehicular traffic can result in direct injury to the roots, indirect injury through soil drainage changes, reduced soil aeration or decreased soil penetrability. If severe enough soil compaction can lead to a rapid decline in many tree species and may eventually result in instability and uprooting.
- Changes in drainage patterns. Changes in drainage patterns may result from hard surfacing, trenching, land shaping and other construction activities. These can result in either drought stress or waterlogging, both of which can cause a rapid decline in trees and may result in instability and uprooting.

15.3. AS 4970 -2009

This report generally conforms to *AS 4970 – 2009 Protection of Trees on Development Sites* except in the following areas.

15.3.1.

AS 4970 notes that the project arborist should verify the accuracy of feature survey for the subject site.

- This is generally not feasible and the feature survey is taken as being an accurate representation of the features of the site. However if trees are found on the site that are not represented in the feature survey then these trees will be added to the report plans based on a visual estimation of their location.
- Accordingly the location of these trees may not be sufficiently accurate for the purposes of the report. The location of these trees should verified by a qualified surveyor where appropriate.

15.3.2.

AS 4970-2009 Protection of Trees on Development Sites makes no differentiation between the Tree Protection Zone (TPZ) derived from the trees DBH and the modified TPZ derived from the trees canopy where it extends past the DBH derived TPZ. As the two forms of TPZ are independent a differentiation between the two forms of TPZ needs to be made. In this report:

- “TPZ” refers to the DBH derived Tree Protection Zone (12 x DBH) and “mTPZ” pertains to the TPZ where it is modified to account for a canopy that extends beyond the DBH derived TPZ.
- The modified Tree Protection Zone (mTPZ) for all trees is taken as being identical to the Tree Protection Zone (TPZ) except where the canopy of the tree extends beyond the TPZ. Where this is the case the TPZ is shown on the site plans and any tree canopy impacts are addressed as required within the report. Otherwise the mTPZ is recorded within this report as “= TPZ”.

15.4. Explanation of terms

The assessment of Health, Structure, Condition, U.L.E. (Useful Life Expectancy), Origin, Maturity, Form and Retention value are based on the following definitions. In the case of health and structure these definitions encompass only the more common indicators for these assessments. Other indicators not included in these definitions may lead to the ascribing of a particular health or structure category.

15.4.1. Maturity

The notation of “Maturity” is based on the following categories.

• Category	Description
• Immature	Less than 20% of the life expectancy for that tree.
• Mature	20 – 80% of the life expectancy for that tree.
• Overmature	> 80% of the life expectancy for that tree.

15.4.2. Health

Pertains to the health and growth potential of the tree. The notation of “Health” is based on the following categories.

Category	Example
• Good	Crown full, with good foliage density. Foliage is entire with average colour, minimal or no pathogen damage. Above average growth indicators such as extension growth, leaf size and canopy density. Little or no canopy die-back. Generally no dead wood on the perimeter of the canopy. Good wound wood development. Tree exhibits above average health and no works are required.
• Fair	Tree may have more than 30% dead wood, or may have minor canopy dieback. Foliage density may be slightly below average for the species. Foliage colour may be slightly lower than average and some discolouration may be present. Typical growth indicators, e.g. extension growth, leaf size, canopy density for species in location. Average wound wood development. The tree exhibits below average health and remedial works may be employed to improve health.
• Poor	Tree may have more than 30% dead wood and canopy die back may be present. Leaves may be discoloured and/or distorted, often small, and excessive epicormic growth may be present. Pathogens and/or stress agents may be present that could lead, or are leading to, the decline of tree. Poor wound wood development. The tree exhibits low health and remedial works or removal may be required.
• Very poor	The tree has more than 30% dead wood. Extensive canopy die back is present. Canopy is very sparse. Pathogens and/or stress agents are present that are leading to the decline of the tree. Very poor wound wood development. The tree exhibits very low health and remedial works or removal are required.
• Dead	Tree is dead and generally should be removed.

15.4.3. Structure

Pertains to the physical structure of the tree including the main scaffold branches and roots. Structure includes those attributes that may influence the probability of major trunk, root or limb failure. The notation of “Structure” is based on the following categories.

<u>Category</u>	<u>Example</u>
• Good	The tree has a well-defined and balanced crown. Branch unions appear to be strong with no defects evident in the trunk or the branches. The tree is unlikely to suffer trunk or branch failure under normal conditions. The tree is considered a good example of the species with a well-developed form.
• Fair	The tree has some minor problems in the structure of the crown. The crown may be slightly out of balance and some branch unions may exhibit minor structural faults or have the potential to create faults. If the tree is single trunked, this may be on a slight lean or be exhibiting minor defects. These defects are not likely to result in catastrophic trunk or branch failure although some branch failure may occur under normal conditions.
• Poor	The tree has significant problems in the structure of the scaffold limbs or trunk. It may be lop-sided or have few branches on one side or have large gaps in the crown. Large branches may be rubbing or crossing over. Branch unions may be poor, and faults at the point of attachment or along the branches may be evident. The tree may have a substantial lean. The tree may have suffered significant root damage. The tree may have some degree of basal or trunk damage. These defects may predispose the tree to major trunk or branch failure.
• Very poor	The tree has some very significant problems in the structure of the crown. It may be lop-sided or have few branches on one side or have large gaps in the crown. Branches may be rubbing or crossing over and causing damage to each other. Branch unions may be poor, and faults at the point of attachment or along the branches may be evident. The tree may have a substantial lean. The tree may have suffered major root damage. The tree may have extensive basal or trunk damage. These defects are likely to predispose the tree to trunk or scaffold limb failure.

15.4.4. U.L.E. (Useful Life Expectancy)

U.L.E. pertains to the span of time that the tree might reasonably be expected to provide useful amenity value with an acceptable level of safety at an acceptable cost. Depending on the situation, available financial resources and other factors, two identical trees may be accorded different longevity ratings. The notation of U.L.E. is based on the following categories.

<u>Category</u>	<u>Example</u>
• 0	The tree is dead or almost dead or constitutes an immediate and unacceptable hazard. The tree should generally be removed unless other considerations require its' retention.
• 0 – 5	The tree is unlikely to provide useful amenity for longer than 5 years. The tree is in serious decline, poses an unacceptable hazard and/or requires a level of maintenance disproportionate with its' value. The tree should generally be removed unless other considerations require its' retention.
• 5 – 15	The tree is unlikely to provide useful amenity for longer than 15 years.

	The tree may be in serious decline, be a very short-lived species, present a moderately elevated hazard and/or require high levels of maintenance. The tree could be retained or removed depending on the situation.
• 15 – 25	The tree is unlikely to provide useful amenity for longer than 25 years. The tree may be in moderate decline, be a short-lived species, present a slightly elevated hazard and/or require moderate levels of maintenance. The tree should generally be retained unless other factors dictate its' removal.
• 25 – 50	The tree is likely to provide useful amenity for up to 50 years. The tree may be in fair to good condition, have a moderate life-span, present a low to moderate level of hazard and/or require moderate levels of maintenance. The tree should generally be retained unless other factors dictate its' removal.
• > 50	The tree is likely to provide useful amenity for greater than 50 years. The tree may be in good to excellent condition, a long lived species, present a low level of hazard and/or require low levels of maintenance. The tree should generally be retained unless other factors dictate its' removal.

15.4.5. Form

The notation of “Form” pertains to the aesthetic qualities of the trees live canopy. Generally good form is indicative of a symmetrical, well-balanced canopy although this is dependent on the particular species. Some species naturally develop an asymmetric canopy and in this case a highly irregular canopy might be described as good.

The form of a tree is considered assuming that the tree stands in isolation from any surrounding trees. This may mean that a group of trees that exhibit good form as a group, may be described as having poor form as individuals. The notation of “Form” is based on the following categories.

Category	Example
• Very good	An outstanding specimen of that species. Generally, a very evenly balanced and symmetrical canopy with no deformation. If the development of that species is naturally irregular, then an outstanding specimen of that species.
• Good	A good specimen of that species. Generally a well-balanced and symmetrical canopy with minor deformation. If the development of that species is naturally irregular, then a good specimen of that species.
• Fair	An average specimen of that species. Generally a balanced canopy with some minor to moderate asymmetry. If the development of that species is naturally irregular, then an average specimen of that species.
• Poor	A below average specimen of that species. Generally, a moderate to high degree of asymmetry. If the development of that species is naturally irregular then a poor specimen of that species.
• Very poor	A very poor specimen of that species. Generally a high to extreme degree of asymmetry. If the development of that species is naturally irregular then a very poor specimen of that species.

15.4.6. Works required

The works required listed in this report are of a general nature only and should be reviewed following the completion of any works on the site.

Where a tree is recommended for removal (Recommendation) it is not listed in the Works required section of the report. Works required include deadwood >25mm branches, weight reduce, irrigate, and mulch.

15.4.7. Priority

The priority accorded particular works is based on a projected increased site usage following the completion of a development on the site. The priority is of a general nature only and should be reviewed following the completion of any works on the site.

“Priority” is based on the following categories.

<u>Category</u>	<u>Description</u>
• N/A.	No tree works are required
• Very low	Tree works are optional and could be performed at any time.
• Low	Works should be performed within 2 years.
• Moderate	Works should be performed within 1 year.
• High	Works should be performed within 3 months.
• Very High	Works should be performed as soon as possible.

15.4.8. Value

The value ascribed to each tree in this report is not definitive and should be used as a guide only. Many factors influence the comparative value of a tree and a number of these factors are outside the scope of arboricultural assessment. These factors cannot therefore be addressed in a single rating system.

Value is comprised of two parts. These are the Amenity Value of the tree rated as Very Low to Very high and the Useful Life Expectancy (ULE) of the tree.

- The Amenity Value of the tree relates to the contribution of the tree to the aesthetic amenity of the area. The primary determinants of amenity value are tree health, size and form. The Amenity Value is then modified by the ULE of the tree with short ULE values reducing the Value of the tree and long ULE values increasing the Value of the tree.
- Trees that are listed on a register of heritage or significant trees are not accommodated within this rating system as these values are often independent from the arboricultural attributes of the tree. Heritage and significant trees may be ascribed a very low retention value despite their listing on any register. Where known, any heritage or significant register listing it will be noted in the report.

Value is assessed on each tree as a single entity. The value of a group of trees is not considered in this context and each tree within the group will be assessed as an individual.

Value is based on the following categories.

Category	Example
<ul style="list-style-type: none">• Very high	Generally a very large tree that exhibits excellent health and/or form or a tree that is listed on a heritage or significant tree register.
<ul style="list-style-type: none">• High	Generally a large tree that exhibits good health and/or form.
<ul style="list-style-type: none">• Medium	Generally a medium tree that exhibits good health and/or form. May be a large tree that exhibits fair health and/or form.
<ul style="list-style-type: none">• Low	Generally a small tree that exhibits good health and/or form. May be a large or medium tree that exhibits fair or poor health and/or form.
<ul style="list-style-type: none">• Very low	Generally a small tree that exhibits poor health and/or form. May be a large or medium tree that exhibits poor, or worse, health and/or form.

15.5. Glossary

<u>Tree Protection Zone (TPZ)</u>	Is based on AS 4970-2009 <i>Protection of trees on development sites</i> and defines the soil volume that is likely to be required to encompass enough of the trees absorbing root system to ensure the long-term survival of the tree. The radius specified as the TPZ is an estimate of the minimum distance from the tree that excavation or other activities that might result in root damage should occur to avoid negative impacts on the health and longevity of the tree. AS 4970 states that intrusion of up to 10% of the surface area of the TPZ may occur without further assessment or analysis.
<u>Structural Root Zone (SRZ)</u>	Is based on AS 4970-2009 (Protection of trees on development sites) and defines the likely spread of the trees scaffold root system. These roots are the primary anchoring roots for the tree and damage to these roots may render the tree liable to uprooting. SRZ is based on measurement of the trunk above the root flair (AS 4970) However in this report SRZ is based on the measured or estimated DBH and there should be taken as an estimate only. Additional measurement may be required if construction near the SRZ is expected to occur.
<u>Modified Tree Protection Zone (mTPZ)</u>	Is based on the TPZ and includes any requirement to protect the above ground parts of the tree that project beyond the TPZ. However generally the mTPZ will be equal to the TPZ. TPZ extension beyond the TPZ to protect the tree canopy will be shown on the site plan but will not be reflected in the TPZ radius measurements quoted in this report.
<u>DBH (Diameter at Breast Height)</u>	Is the diameter of the tree at approximately 1.4 meters above ground level. Where a trunk is divided at or near 1.4 meters above ground the DBH is generally measured at the narrowest point of the trunk between ground level and 1.4 meters. Alternatively, where a higher level of accuracy is required with multi stemmed trees, DBH is derived from the combined cross-sectional area of all trunks. The DBH of all accessible trees is measured unless otherwise stated in the Tree Data section of this report. The DBH of trees on adjoining properties is measured where access can be readily gained to the property, otherwise it is estimated.
<u>Measured</u>	Indicates whether the DBH has been measured or estimated. DBH may be estimated for small low value multi stem trees or trees that are inaccessible.
<u>Retained?</u>	Indicates whether the tree is shown as being removed or retained on the plans provided. This is generally derived from the site plans provided but the removal or retention of trees might be communicated by other means.
<u>Recommendation reason</u>	Pertains to the reason that removal or retention or other works are recommended. Other than trees on adjoining properties or road reserves a reason for retention is usually not given. In this case N/A is used.
<u>Height & width</u>	Tree height is generally measured for moderate, high and very high value trees and is measured with an Impulse Laser infrared range finder. The height of low and very low value trees is usually estimated. Canopy width is estimated unless otherwise stated.
<u>Genus / species</u>	The identification of trees is based on accessible visual characteristics and given that key identifying features are often not available at the time of assessment the accuracy of identification is not guaranteed. Where the species of any tree is not known, sp. is used.



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