



Assessment of trees at Camp Reserve,
Castlemaine

Arboricultural Impact Assessment

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1. Introduction

Upgrades are proposed to Camp Reserve in Forest Street Castlemaine that includes a new pavilion, change rooms, spectator areas and surrounding infrastructure. New parking and an access road are also proposed along with netball courts and associated facilities.

This report will provide:

- the findings of the assessment
- impacts from the proposed design
- recommendations.

2. Tree Assessment Method

Cameron Ryder inspected the trees within proximity to the proposed Stage 1 works as requested on Thursday, 22 February 2024. The following data are presented in this report:

- Unique ID (maintained with Treelogic ID numbers)
- Image of tree
- Botanic and common name
- Tree dimensions (Height x Width)
- Diameter at breast height (DBH)
- Diameter at base (DAB)
- Health
- Structure
- Useful life expectancy (ULE)
- Retention value
- Comments

Trees have been aligned to match supplied drawings. Tree protection detail has been prepared and mapped in accordance with AS4970-2009 *Protection of Trees on Development Sites*.

The trees were visually assessed from ground level, heights and widths were estimated and trunks measured with a diameter tape. No invasive tests were conducted or samples taken and any assessments of decay are qualitative only.

For all tree assessment descriptors, see Appendix 1.

3. Site Map

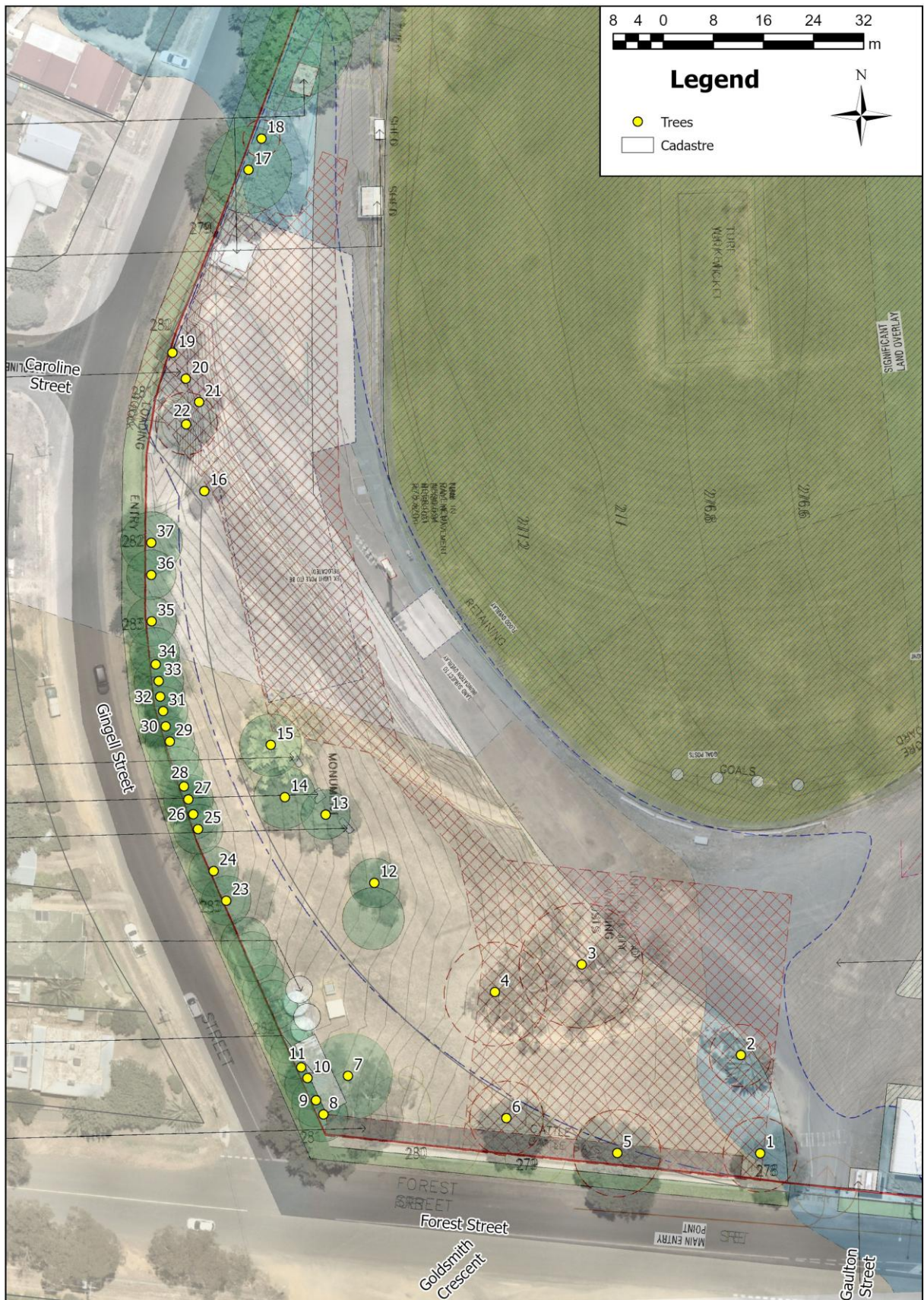


Figure 1: Aerial image of all trees (Nearmap image date December 2023).

4. Tree Details

Table 1: Tree assessment summary.

ID	Botanical Name	Common Name	Origin	Age	Height	Width	DBH	DAB	Health	Structure	ULE	Retention	TPZr (m)	SRZr (m)
1	<i>Schinus molle</i>	Peppercorn Tree	Exotic	Mature	8	10	85 71	200	Good	Fair	20+	High	13.32	4.43
2	<i>Phoenix canariensis</i>	Canary Island Date Palm	Exotic	Mature	10	5	73	-	Good	Good	20+	High	3.5	N/A
3	<i>Eucalyptus camaldulensis</i>	River Red Gum	Indigenous	Over mature	22	16	137	148	Poor	Fair	20+	High	15	3.9
4	<i>Eucalyptus camaldulensis</i>	River Red Gum	Indigenous	Mature	22	12	78	96	Fair	Fair	20+	High	9.36	3.25
5	<i>Ulmus ×hollandica</i>	Dutch Elm	Exotic	Mature	14	12	85	94	Good	Fair	20+	High	10.2	3.22
6	<i>Ulmus ×hollandica</i>	Dutch Elm	Exotic	Over mature	9	10	76	83	Fair	Poor	11-20	High	9.12	3.06
7	<i>Eucalyptus melliodora</i>	Yellow Box	Indigenous	Mature	18	12	82	104	Good	Fair	20+	High	9.84	3.36
8	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	8	8	52	65	Fair	Fair	6-10	Low	6.24	2.76
9	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	14	10	66	78	Fair	Fair	6-10	Moderate	7.92	2.98
10	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	14	8	51	61	Poor	Fair	6-10	Moderate	6.12	2.69
11	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	14	8	51	63	Poor	Fair	1-5	Low	6.12	2.73
12	<i>Schinus molle</i>	Peppercorn Tree	Exotic	Mature	9	8	51	65	Fair	Fair	20+	Moderate	6.12	2.76
13	<i>Ulmus ×hollandica</i>	Dutch Elm	Exotic	Mature	8	8	42	48	Fair	Fair	20+	Moderate	5.04	2.43
14	<i>Schinus molle</i>	Peppercorn Tree	Exotic	Mature	9	9	49	66	Fair	Fair	20+	Moderate	5.88	2.78
15	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	10	11	64	72	Fair	Fair	11-20	Moderate	7.68	2.88
16	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Indigenous	Mature	8	5	28	32	Good	Fair	11-20	Moderate	3.36	2.05
17	<i>Quercus robur</i>	English Oak	Exotic	Mature	18	18	84	99	Good	Good	20+	High	10.08	3.3
18	<i>Quercus robur</i>	English Oak	Exotic	Mature	16	6	34 23	37 27	Fair	Fair	20+	Moderate	4.92	2.39
19	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Indigenous	Mature	8	6	27	32	Good	Fair	11-20	Moderate	3.24	2.05
20	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Indigenous	Mature	6	4	17	23	Fair	Fair	11-20	Low	2.04	1.79
21	<i>Eucalyptus leucoxylon</i>	Yellow Gum	Indigenous	Mature	5	4	17	22	Fair	Fair	11-20	Low	2.04	1.75
22	<i>Ulmus ×hollandica</i>	Dutch Elm	Exotic	Mature	9	9	32 26	52	Fair	Fair	11-20	Low	5.52	2.51
23	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	11	7	50	62	Poor	Fair	6-10	Low	6	2.71
24	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Severe decline	11	5	47	59	Very poor	Poor	1-5	Low	5.64	2.65

ID	Botanical Name	Common Name	Origin	Age	Height	Width	DBH	DAB	Health	Structure	ULE	Retention	TPZr (m)	SRZr (m)
25	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Severe decline	11	5	40	47	Poor	Poor	0	None	4.8	2.41
26	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Severe decline	11	4	23	30	Dead	Very Poor	0	None	2.76	2
27	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	11	6	39	48	Poor	Poor	1-5	None	4.68	2.43
28	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	5	6	33	40	Very poor	Poor	1-5	None	3.96	2.25
29	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	8	6	31	38	Poor	Poor	6-10	None	3.72	2.2
30	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Severe decline	7	5	23	30	Very poor	Poor	0	Low	2.76	2
31	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Over mature	9	5	27	34	Poor	Poor	6-10	None	3.24	2.1
32	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	10	7	37	44	Fair	Fair	6-10	Low	4.44	2.34
33	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	10	6	37	45	Fair	Fair	6-10	Low	4.44	2.37
34	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	9	7	39	43	Fair	Fair	6-10	Low	4.68	2.32
35	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	7	7	37	44	Fair	Fair	6-10	Low	4.44	2.34
36	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	6	7	36	42	Fair	Poor	1-5	Low	4.32	2.3
37	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	Mature	6	8	60	72	Fair	Poor	1-5	Low	7.2	2.88

5. Discussion

5.1 The Site

Camp Reserve is an historic public space and premier sporting reserve located centrally in the Mount Alexander Shire's main population centre of Castlemaine. Situated a short distance west of the Castlemaine Town Centre, the Reserve occupies an area of approximately 3.8ha and is bounded by Barkers Creek, Forest Street and Gingell Street (Figure 2 and Figure 3).

The area of prime concern is a small section of the reserve in the south-west corner totalling approximately 1ha.

The assessment area is mostly comprised of planted specimens with coniferous species being prominent along the boundary with Gingell Street. Several other exotics are present including Dutch Elm *Ulmus xhollandica* and English Oak *Quercus robur*.

There are 3 species likely to be indigenous and remnant to the site. Trees 3 & 4 River Red Gum *Eucalyptus camaldulensis* and Tree 7 Yellow Box *Eucalyptus melliodora*. Trees 3 & 4 are centrally located within the reserve and have suffered decline in recent years (Figure 2).



Figure 2: Southern section of the assessment area with Trees 3 & 4 surrounded by the white picket fence.



Figure 3: Northern section of the assessment area.

The majority of the assessed area of Camp Reserve is within Public Park and Recreation Zone (PPRZ). A south-west sliver of the reserve is General Residential Zone (GRZ1) where it is adjacent with Gingell Street. Trees within PPRZ include 1-4 & 12-22 whereas trees within the GRZ1 include 5-11 & 23-37.

Heritage Overlay (HO668) applies to the site and tree controls apply. A permit is required to remove, destroy or lop a tree. There are no other planning overlays that restrict the removal, destruction or lopping of trees within the project area; however, Significant Landscape Overlay Schedule 2 (SLO2) exists along the Barkers Creek to the east.

Clause 52.17 Native Vegetation exists and is likely to be applicable to Trees 3, 4 & 7. A permit and offsets would be required if any of these trees were removed.

Much of the southern portion of the reserve is located within a Designated Bushfire Prone Area and as such exemptions listed under Clause 52.12 Bushfire Protection Exemptions would apply if relevant (Figure 4).

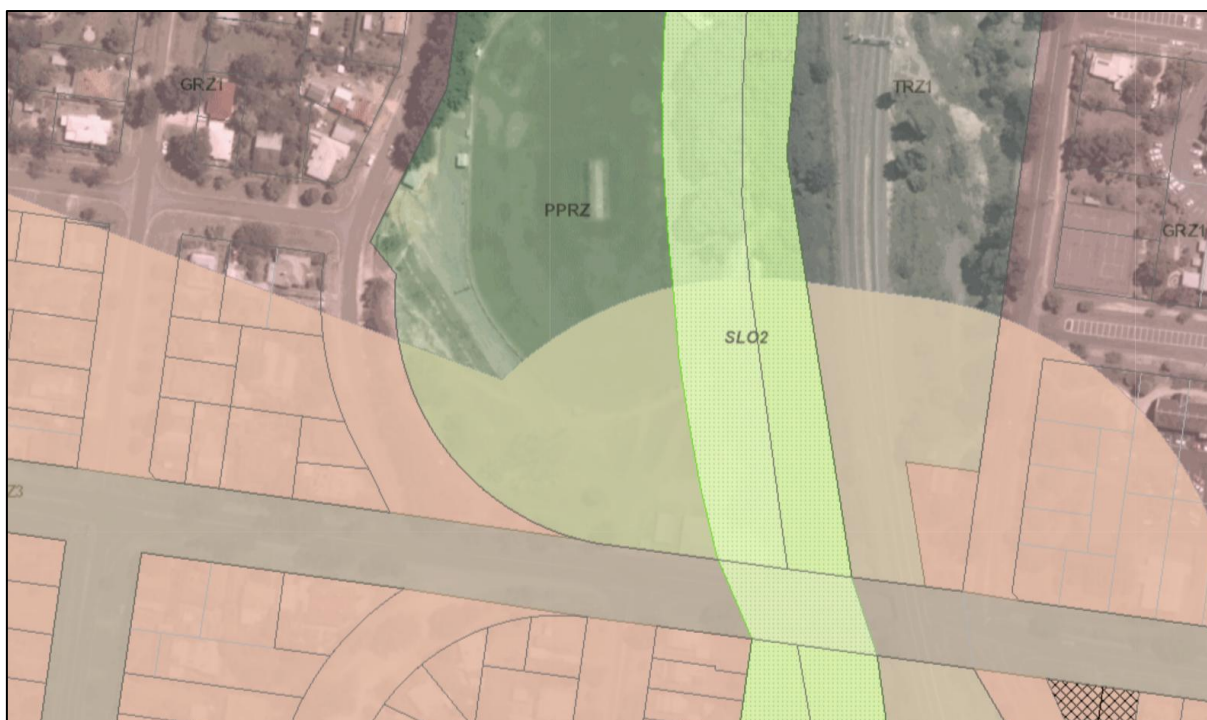


Figure 4: Planning mapping for the site showing zoning, overlays and bushfire prone areas.

5.2 The Trees

37 trees were assessed at the site, Monterey Cypress comprised the majority of trees with a long planting along the fence line (Table 2).

Table 2: Tree species summary.

Botanical Name	Common Name	Origin	Count
<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	Exotic	20
<i>Ulmus ×hollandica</i>	Dutch Elm	Exotic	4
<i>Eucalyptus leucoxylon</i> *	Yellow Gum	Indigenous	4
<i>Schinus molle</i>	Peppercorn Tree	Exotic	3
<i>Quercus robur</i>	English Oak	Exotic	2
<i>Eucalyptus camaldulensis</i>	River Red Gum	Indigenous	2
<i>Phoenix canariensis</i>	Canary Island Date Palm	Exotic	1
<i>Eucalyptus melliodora</i>	Yellow Box	Indigenous	1
Total			37

*Whilst Yellow Gum is listed as indigenous, the cultivar that is growing is a planted ornamental and not a locally occurring subspecies.

At the southern end of the assessment area, are a group of planted trees (ID 1, 2, 5, 6 & 12-15). Based on species type and maturity, it is estimated that they were planted in the early twentieth century. This included the Peppercorn *Schinus molle*, Dutch Elm, Canary Island Date Palm *Phoenix canariensis* and Golden Monterey Cypress *Hesperocyparis macrocarpa* 'Horizontalis Aurea'.

These trees generally had fair to good health with long ULEs of 11-20 or 20+ years. Tree 1 was a large Peppercorn with basal decay near the front entrance gate. It is commonplace for the species to suffer trunk decay at maturity. Following a review of tree structure, the decay was not assessed as likely to result in significant failure.

Trees 12-15 were located around an existing war memorial and associated seating (Figure 5). They all had fair health and structure with long ULEs. Trees 14 & 15 both had broken branches.



Figure 5: Trees 12-15 around the existing memorial.

Trees 16-22 were located at the northern end of the assessment area and comprised a mix of species and planting dates:

- Trees 16 & 19-21 were a cultivated form of Yellow Gum *Eucalyptus leucoxylon* 'Rosea'. The trees were planted at the site and are likely to be approximately 20-30 years of age (Figure 6). They all had fair to good health and structure with ULEs of 11-20 years. This cultivated form of Yellow Gum often suffers branch failures in maturity.
- Trees 17 & 18 were both English Oak and are the 2 southernmost specimens in a longer line of ~10 trees. Tree 17 was likely to be an original planting given its size with a DBH of 84cm and a height of 18m. It is estimated that the trees were probably planted in the first half of the twentieth century. Tree 18 was substantially smaller than the other trees. It is likely to have self-sown from an acorn from the surrounding trees.
- Tree 22 was a multistemmed Dutch Elm (Figure 6). It is unclear whether this tree was planted; however, given the multistemmed growth habit, it is possible that what exists today is just stump regrowth from a tree that was removed some time ago. Dutch Elm has a propensity to sucker and so the surrounding shoots are likely to be root suckers.



Figure 6: Trees 19-22.

Trees 8-11 & 23-37 were all Monterey Cypress growing along the fence line. Based off the alignment and aerial imagery, it appears that there was an entire row along the fence line; however, several have been removed over the years.

The trees were generally in a state of decline with deadwood and broken branches evident. They were all assessed with fair to poor health and structure with ULEs between 0 and 10 years. It is likely that the trees were suffering from Cypress Decline, a term given to a number of different fungal pathogens including Cypress Canker (*Seiridium* species), *Botryosphaeria*, *Phomopsis* and *Pestalotiopsis* species (DEDJTR 2017). These fungi can all cause dieback, particularly if the trees have been stressed.

The fungus kills the plant's vascular tissue, sometimes causing characteristic sunken, lens-shaped cankers and ringbarking. This interferes with the vascular system of the tree and eventually causes death above the wound. Generally, older trees are more susceptible but any tree is susceptible if in a stressed state (DEDJTR 2017, Sinclair & Lyon 2005).

These trees were in poor condition and should not be considered a constraint to the site.



Figure 7: Trees 23-28.



Figure 8: Trees 29-37.

Trees 3 & 4 were both large River Red Gum located within close proximity to each other, only a few metres from the asphalt at the southern end of the site (Figure 9). Tree 3 was the larger of the pair, Tree 4 had grown as a somewhat suppressed specimen with a phototropic lean.



Figure 9: Trees 3 (left) & 4 (right).

Aerial imagery from 1946 was reviewed to provide an estimate of the trees' age (Figure 10). 79 years ago, there was a significant patch of dark grey that is likely to have been the subject trees. Based on this, they would have been mature specimens when the photo was taken. An estimate of 150-200 years of age is provided for the trees.



Figure 10: 1946 aerial imagery of Camp Reserve shows a large canopy in the location of Trees 3 & 4 (<https://mapshare.vic.gov.au/webmap/historical-photomaps>)

5.3 Retention Value

The trees were assessed for their health, structure and ULE and placed in a retention category:

- 8 trees (ID 1-7 & 17) have a High retention value
- 9 trees (ID 9, 10, 12-16, 18 & 19) have a Moderate retention value
- 14 trees (ID 8, 11, 20-24, 30 & 32-37) have a Low retention value
- 6 trees (ID 25-29 & 31) have no retention value and should be removed.

5.4 Tree Protection

Trees have been assigned a retention value (section 4 Tree Details) which should be used as a guide to aid in decision-making regarding tree retention and removal at a site. Any trees retained as part of a project will require protection during construction. The easiest way of achieving this is with the installation of Tree Protection Zones.

5.4.1 Tree Protection Zones

It is important when considering development or construction that assets to be retained are properly protected. In this case the trees are the assets and require protection if they are to be retained in the landscape long-term. Damage to the trees can come in 1 of 2 ways. The first is immediate damage directly to the tree in the form of root severance, breaking of branches and wounding of the trunk. The second is more insidious and can take some time to manifest. This is a more indirect form of damage and usually relates to modification of soil structure or grade, drainage patterns or hydrology (Coder 1995).

Trees can be easily protected from development by the installation of Tree Protection Zones (TPZ). TPZs have been calculated according to AS4970-2009 *Protection of Trees on Development Sites* for all trees to be retained. This calculates the TPZ radius by multiplying the trunk DBH by 12 to a maximum of 15m radius. These figures have been supplied in section 4 Tree Details and 5.6 TPZ & Proposed Design Map.

5.4.2 Structural Root Zones (SRZs)

The structural root zone is a formula to define the theoretical volume of soil and tree roots required to keep a tree stable in the ground. It is in no way related to tree health and significant excavation at or near the SRZ for many trees will cause severe decline and/or death.

Excavation within SRZs can lead to whole tree failure often with devastating results. SRZs have been calculated in accordance with AS 4970-2009 *Protection of Trees on Development Sites* using the equation:

$$R_{srz} = (D \times 50)^{0.42} \times 0.64$$

Where D=trunk diameter at base in metres.

These figures have been supplied in section 4 Tree Details and 5.6 TPZ & Proposed Design Map.

5.4.3 Encroachment

Encroachment of less than 10% of the TPZ and outside the SRZ is deemed to be minor encroachment according to AS 4970-2009. See Figure 11. Variations must be made by the project arborist considering other relevant factors including tree health, vigour, stability, species sensitivity and soil characteristics.

Encroachment of more than 10% of the TPZ or into the SRZ is major encroachment. The project arborist must demonstrate that the tree(s) would remain viable. This may require root investigation by non-destructive methods and consideration of relevant factors tree health, vigour, stability, species sensitivity and soil characteristics.

In any case, the lost TPZ should be compensated and be contiguous with the existing TPZ.

5.5 Design Proposal

The proposal will comprise the following elements:

- Demolition of existing structures
- Excavation and construction of new club rooms, viewing areas and function space
- New netball courts and surrounding infrastructure
- Formalisation of existing car park area.

See section 5.6 TPZ & Proposed Design Map and Appendix 2.

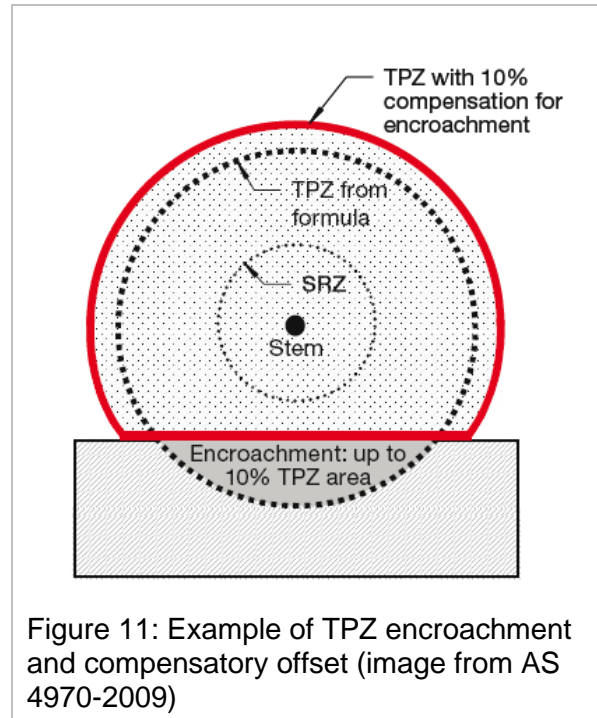


Figure 11: Example of TPZ encroachment and compensatory offset (image from AS 4970-2009)

5.6 TPZ & Proposed Design Map



5.7 Arboricultural Impact Assessment

The impact of the proposal on the trees' TPZs and SRZs have been assessed (Table 3). Trees with an assessment of 100% encroachment include those where the trunk is located within the development. Trees not encroached are not shown.

The percentage encroachments were calculated and the levels of impact were determined in accordance with AS 4970-2009, *Protection of Trees on Development Sites* as follows:

- **Major** - Encroachment >10% and/or SRZ intrusion
- **Minor** - Encroachment <10% and no SRZ intrusion

Table 3: Construction Impact

ID	Retention	TPZr (m)	SRZr (m)	Encroachment %	SRZ Intrusion	Encroachment level	Outcome/ Comments
1	High	13.32	4.43	100	Yes	Major	Netball Courts, Tree is lost
2	High	3.5	-	100	Yes	Major	Netball Courts, Tree is to be transplanted
3	High	15	3.9	100	Yes	Major	Netball Courts, Tree is lost
4	High	9.36	3.25	100	Yes	Major	Netball Courts, Tree is lost
5	High	10.2	3.22	100	Yes	Major	Netball Courts, Tree is lost
6	High	9.12	3.06	100	Yes	Major	Netball Courts, Tree is lost
16	Moderate	3.36	2.05	100	Yes	Major	Club rooms and earth batter, Tree is lost
17	High	10.08	3.3	15	No	Major	New club rooms, timekeeper hut and path, retain
18	Moderate	4.92	2.39	7	No	Minor	New path, retain
19	Moderate	3.24	2.05	100	Yes	Major	Club rooms and earth batter, Tree is lost
20	Low	2.04	1.79	100	Yes	Major	Club rooms and earth batter, Tree is lost
21	Low	2.04	1.75	100	Yes	Major	Club rooms and earth batter, Tree is lost
22	Low	5.52	2.51	100	Yes	Major	Club rooms and earth batter, Tree is lost

It must be noted that any impacts associated with the car park being formalised have not been assessed. This was beyond the scope of the initial tree assessment proposal.

5.7.1 Netball Court Impacts

The proposed netball courts will result in the loss of Trees 1-6, all of which were assessed as high retention value (Figure 12). Tree 2 is a Canary Island Date Palm, and it is proposed to be transplanted into another area of the site. A significant redesign would be required if any of these trees required retention.

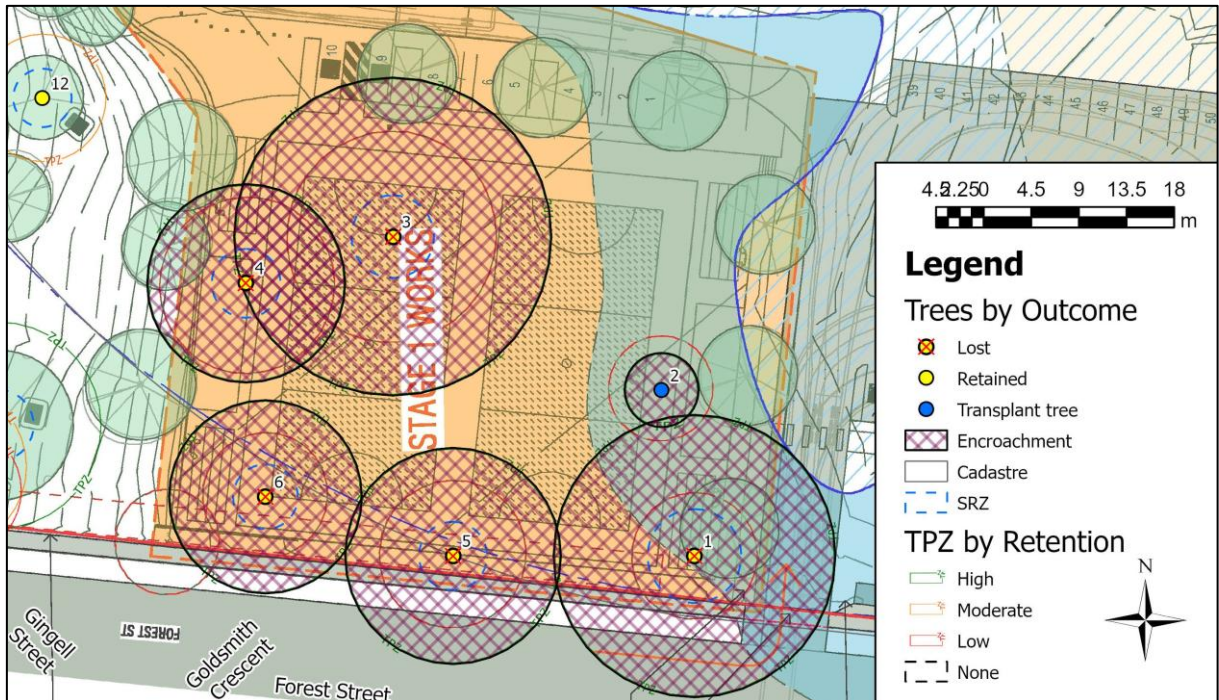


Figure 12: Tree impacts from proposed netball courts.

5.7.2 Club Rooms

Trees 16 & 19-22 will all be impacted by the proposed clubrooms and associated earthworks and require removal to facilitate the design (Figure 13). There are no simple design mitigation measures that could retain these trees, all of which were assessed with low or moderate retention values.

There will be 15% TPZ encroachment to Tree 17 from the proposed structures. The following comments are made regarding the likely impact to the tree:

1. Works for the timekeepers building will take place in an area that is highly compacted and likely to have few roots.
2. The encroachment on the south side of the tree will take place where there is an existing building proposed to be demolished.
3. The encroachment for the path should require minimal excavation.
4. English Oak tend to have a moderate level of tolerance to root disturbance.
5. A Tree Protection Management Plan must be developed for the site as part of the development works.
6. There must be no excavation within the TPZ for landscaping or other purposes.
7. Tree 17 can be retained.

There will be a 7% TPZ encroachment to Tree 18. This is considered minor encroachment, is beyond the SRZ and the tree will remain viable.

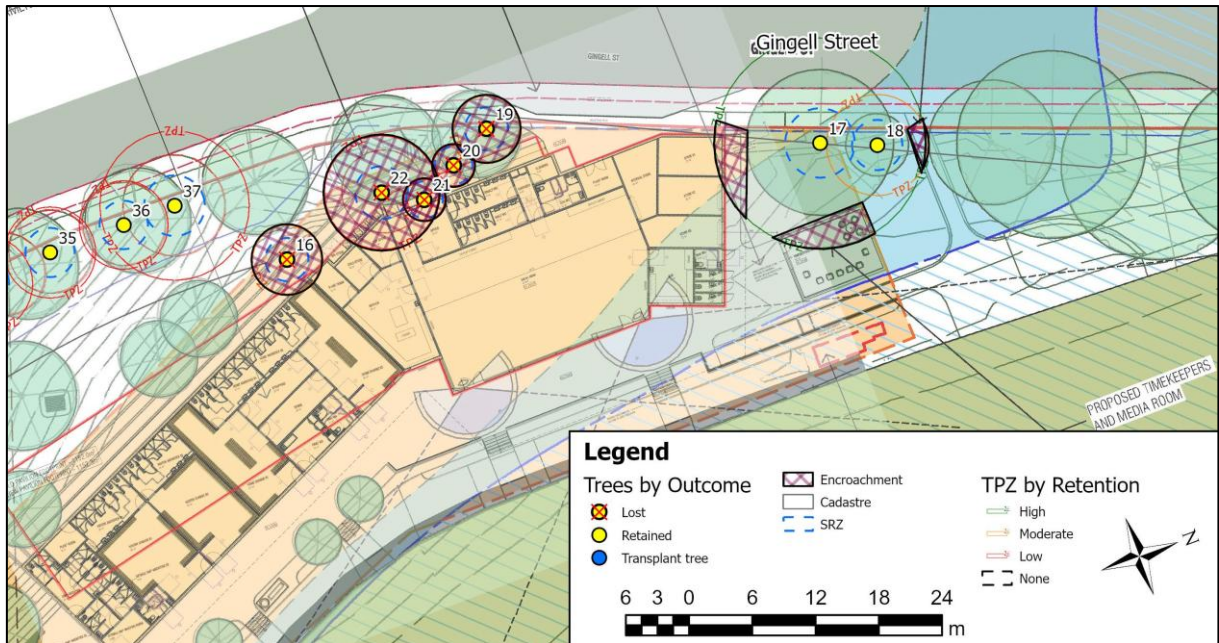


Figure 13: Tree impacts from the club rooms and surrounds.

5.7.3 TPZ Impact Summary

Following a review of the proposed design:

- 10 trees will have 100% TPZ encroachment and will require removal to facilitate the design including:
 - 5 high retention trees (ID 1, 3, 4, 5, 6)
 - 2 moderate retention trees (ID 16 & 19)
 - 3 low retention trees (ID 20, 21 & 22).
- Tree 2 has 100% TPZ encroachment; however, it is a Canary Island Date Palm and is proposed for transplant.
- Tree 17 will have major encroachment of 15% and can be retained
- Tree 18 will have minor TPZ encroachment and can be retained
- 24 trees will not be encroached by the proposal.

5.8 Tree Protection Management Plan

Following completion of a design and approval of trees to be retained and removed, a Tree Protection Management Plan (TPMP) is to be developed. It is to contain:

- The engagement of a project arborist with a minimum qualification of Diploma in Arboriculture (AQF level 5 or equivalent)
- Detail regarding how the trees will be retained:
 - During demolition
 - Prior to and during construction
 - Post construction
- A tree protection plan to scale that is to show:
 - all tree protection zones and structural root zones,
 - all tree protection fenced off areas and areas where ground protection systems will be used

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- The type of footings within the tree protection zone
 - All services to be located within the tree protection zone and a notation to state that all services will either be located outside of the tree protection zone or bored under the tree protection zone
 - A notation to refer to the tree management plan for specific detail on what actions are required within the tree protection zone.
 - Location of tree protection measures and ground protection
 - Certification, milestones, inspection times and hold points.

The TPMP is to be developed in accordance with AS4970-2009 *Protection of Trees on Development Sites*.

6. Conclusion

C&R Ryder Consulting was engaged to assess trees in the vicinity of the proposed Stage 1 works at Camp Reserve, Castlemaine.

37 trees were assessed in the southern part of the reserve and comprised a mix of planted and naturally occurring specimens. Of particular prominence are Trees 3, 4 & 7 being of indigenous origin and Tree 17 being a large English Oak.

The trees were assessed for their health, structure and ULE and placed in a retention category:

- 8 trees (ID 1-7 & 17) have a High retention value
- 9 trees (ID 9, 10, 12-16, 18 & 19) have a Moderate retention value
- 14 trees (ID 8, 11, 20-24, 30 & 32-37) have a Low retention value
- 6 trees (ID 25-29 & 31) have no retention value and should be removed.

An arboricultural impact assessment was completed for the Stage 1 proposal. Following a review of the proposed design:

- 10 trees will have 100% TPZ encroachment and will require removal to facilitate the design including:
 - 5 high retention trees (ID 1, 3, 4, 5, 6)
 - 2 moderate retention trees (ID 16 & 19)
 - 3 low retention trees (ID 20, 21 & 22).
- Tree 2 has 100% TPZ encroachment; however, it is a Canary Island Date Palm and is proposed for transplant.
- Tree 17 will have major encroachment of 15% and can be retained
- Tree 18 will have minor TPZ encroachment and can be retained
- 24 trees will not be encroached by the proposal.

Impacts associated with the car park being formalised have not been assessed. This was beyond the scope of the initial tree assessment proposal.

7. Recommendations

It is recommended that:

1. TPZs and SRZs are incorporated and shown on plans for the site to help identify any further opportunities for tree retention.
2. The design team maintains contact with the project arborist as the plans are refined.
3. If there are any further changes to the design, the impacts are reassessed.
4. A Tree Protection Management Plan is prepared by the project arborist following approval of a design and associated permits.

8. References

AS 4970, 2009, *Australian Standard, Protection of Trees on Development Sites*, Standards Australia.

Coder, K. D., 1995, 'Tree quality BMPs for developing wooded areas and protecting residual trees', in *Trees and Building Sites, Proceedings of an International Workshop on Trees and Buildings*, Edited by G. W. Watson and D. Neely, International Society of Arboriculture, Champaign, Illinois.

DEDJTR, 2017, *Cypress Decline*, Department of Economic Development, Jobs, Transport and Resources, accessed 5 June 2017, <http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/plant-diseases/shrubs-and-trees/cypress-decline>

Sinclair, W. A. & Lyon, H. H., 2005, *Diseases of Trees and Shrubs*, Second Edition, Cornell University Press, New York.

Appendix 1. Tree Assessment Descriptors

1.1 Image of tree

Digital image captured on the day of assessments.

1.2 Botanic Name/Common Name

The tree identified to genus and species level as well as the generally accepted common name for the tree.

1.3 Tree Dimensions

The height and width of the tree as estimated by the arborist in whole metres.

1.4 Diameter at Breast Height

The trunk diameter of the tree measured with a diameter tape at 1.4m above ground level.

1.5 Diameter at Base

The trunk diameter of the tree measured with a diameter tape above the root flare.

1.6 Health

Very Good	The tree is demonstrating exceptional growth for the species, has a full, dense canopy and there is no sign of any pest or disease.
Good	The tree is demonstrating good growth for the species with respect to its location and broader context. The canopy is full and complete and there are no signs of pest or disease.
Fair	The tree may have shown a reduction in optimal growth and/or there may be some twiggy deadwood within the canopy. There may be the presence of some pests or diseases that are not causing a significant decline in the tree
Poor	The tree is in decline with little growth. There may be sections of the canopy missing and pests or diseases may be prevalent
Very Poor	The tree is in significant decline, with large sections of the canopy dead. This tree is very unlikely to recover.
Dead	The tree is dead

1.7 Structure

Good	The tree's structure is typical of the species with no significant hazards such as included bark, trunk decay, splits or tears. In general, there will be a single trunk with scaffold and/or subordinate branches that display good attachments
Fair	There may be minor defects in the canopy, but the overall tree is still relatively free of significant issues. The tree may need minor pruning to fix minor defects. The canopy will be mostly symmetrical and typical of the species.
Poor	The tree will have 1 or more significant defect that may be able to be remedied with pruning. This tree is likely to have an atypical canopy and may contain defects such as included bark or codominant stems.
Very Poor	The tree has substantial defects associated with its primary trunk and scaffold structure that cannot be remedied with pruning or other measures. It is likely that this tree will require removal in the short term.
Hazardous	The tree has major defects and is likely to fail. It should be removed as soon as possible.

1.8 Useful Life Expectancy

20+	The tree is a healthy specimen in good condition. It is expected to provide a contribution to the landscape for at least another 20 years with an appropriate level of management.
10-20 years	The tree is a reasonably healthy specimen in good or fair condition. It is expected to provide a contribution to the landscape for 10-20 years with an appropriate level of management.
5-10 years	The tree is in fair condition or a short lived species. It is likely to provide contribution to the landscape for 5-10 years with an appropriate level of management at which point removal may need to be considered.
1-5 years	The tree is a poor specimen in decline and is likely to require removal within 1-5 years.
0 years	The tree is either dead or has substantial defects requiring its removal in the short term.

1.9 Tree Retention

Very High	The tree is an outstanding example of the species and it should be retained at all costs.
High	The tree is a mature specimen in fair to good condition with a ULE of at least 10 years, is suitable to the site and should be retained in a new development.
Moderate	The tree is a semi-mature or mature specimen, in fair to good condition that is suitable for retention; however, is located such that its loss would not have a significant impact on the landscape.
Low	The tree is likely to be juvenile or in decline and could be retained; however, design changes are not considered worthwhile to retain a tree in this category.
None	The tree should be removed irrespective of a design as it is in severe decline, hazardous or dead.
Third Party Tree	This tree is located off the subject property and is owned by a third party. The assessment of health and structure is considered irrelevant as the tree must be retained.

Appendix 2. Enlarged TPZ Map



MAP DETAILS
 ARBORICULTURAL IMPACT
 ASSESSMENT AS PART OF
 PROPOSED STAGE 1 WORKS AT
 CAMP RESERVE, CASTLEMAINE

Legend

Trees by Outcome	TPZ by Retention
Lost (Orange dot)	High (Green hatched)
Retained (Yellow dot)	Moderate (Orange hatched)
Transplant tree (Blue dot)	Low (Red hatched)
Encroachment (Purple hatched)	None (White)
Cadastre (Black outline)	SRZ (Blue dashed line)

CLIENT
 MOUNT ALEXANDER
 SHIRE COUNCIL
 Corner Lyttleton and Lloyd
 Streets
 Castlemaine VIC 3450

SCALE BAR 6.53.25 0 6.5 13 19.5 26 m
Scale: 1:550 SHEET SIZE A3
AUTHOR C. RYDER
DATE 11.03.2025
MAP DATUM GDA 2020 MGA Zone 55



Appendix 3. Photographic Tree Reports

Tree ID 1

Botanical Name: *Schinus molle*

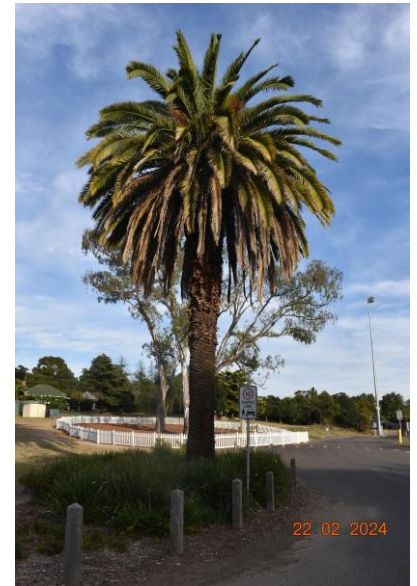
Common Name Peppercorn Tree **Origin:** Exotic
Height (m): 8 **Health:** Good
Width (m): 10 **Structure:** Fair
DBH (cm): 85 71 **ULE:** 20+
Dia. @ base (cm): 200
Age Class: Mature
Retention Value: High
TPZ Radius (m): 13.32 **TPZ encroachment %:**100
SRZ Radius (m): 4.4 **SRZ intrusion:** Yes
Encroachment Level: Major **Outcome:** Lost
Comments:



Tree ID 2

Botanical Name: *Phoenix canariensis*

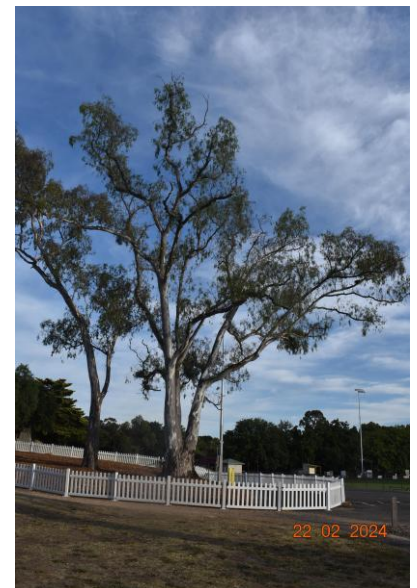
Common Name Canary Island Date Palm **Origin:** Exotic
Height (m): 10 **Health:** Good
Width (m): 5 **Structure:** Good
DBH (cm): 73 **ULE:** 20+
Dia. @ base (cm): -
Age Class: Mature
Retention Value: High
TPZ Radius (m): 3.5 **TPZ encroachment %:**100
SRZ Radius (m): 0.0 **SRZ intrusion:** Yes
Encroachment Level: Major **Outcome:** Transplant tree
Comments:



Tree ID 3

Botanical Name: *Eucalyptus camaldulensis*

Common Name River Red Gum **Origin:** Indigenous
Height (m): 22 **Health:** Poor
Width (m): 16 **Structure:** Fair
DBH (cm): 137 **ULE:** 20+
Dia. @ base (cm): 148
Age Class: Over mature
Retention Value: High
TPZ Radius (m): 15 **TPZ encroachment %:**100
SRZ Radius (m): 3.9 **SRZ intrusion:** Yes
Encroachment Level: Major **Outcome:** Lost
Comments: tree has shown some response with new growth



Tree ID 4

Botanical Name: *Eucalyptus camaldulensis*

Common Name River Red Gum **Origin:** Indigenous

Height (m): 22 **Health:** Fair

Width (m): 12 **Structure:** Fair

DBH (cm): 78 **ULE:** 20+

Dia. @ base (cm): 96

Age Class: Mature

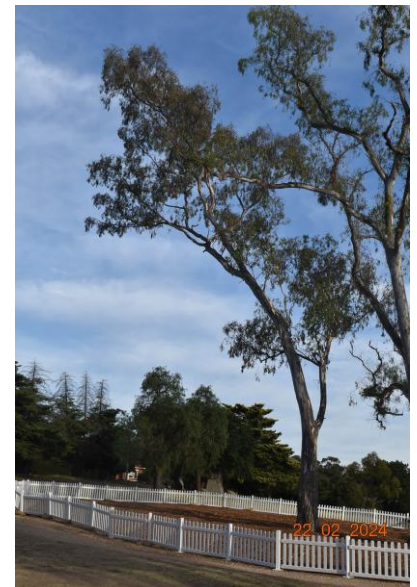
Retention Value: High

TPZ Radius (m): 9.36 **TPZ encroachment %:**100

SRZ Radius (m): 3.3 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments: tree has shown some response with new growth



Tree ID 5

Botanical Name: *Ulmus xhollandica*

Common Name Dutch Elm **Origin:** Exotic

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

Width (m): 12 **Structure:** Fair

DBH (cm): 85 **ULE:** 20+

Dia. @ base (cm): 94

Age Class: Mature

Retention Value: High

TPZ Radius (m): 10.2 **TPZ encroachment %:**100

SRZ Radius (m): 3.2 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:



Tree ID 6

Botanical Name: *Ulmus xhollandica*

Common Name Dutch Elm **Origin:** Exotic

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

Width (m): 10 **Structure:** Poor

DBH (cm): 76 **ULE:** 11-20

Dia. @ base (cm): 83

Age Class: Over mature

Retention Value: High

TPZ Radius (m): 9.12 **TPZ encroachment %:**100

SRZ Radius (m): 3.1 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:

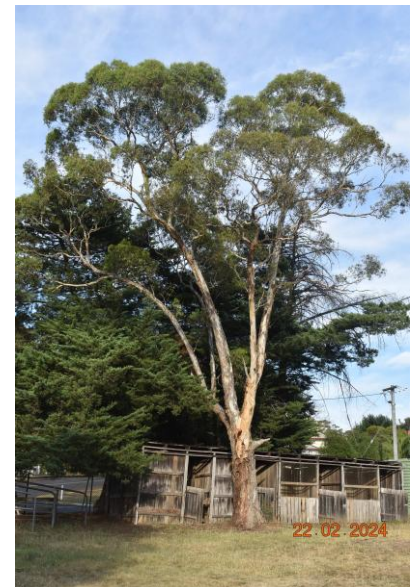


Tree ID 7

Botanical Name: *Eucalyptus melliodora*

Common Name Yellow Box **Origin:** Indigenous
Height (m): 18 **Health:** Good
Width (m): 12 **Structure:** Fair
DBH (cm): 82 **ULE:** 20+
Dia. @ base (cm): 104
Age Class: Mature
Retention Value: High
TPZ Radius (m): 9.84 **TPZ encroachment %:**
SRZ Radius (m): 3.4 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments: stables under western canopy



Tree ID 8

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 8 **Health:** Fair
Width (m): 8 **Structure:** Fair
DBH (cm): 52 **ULE:** 6-10
Dia. @ base (cm): 65
Age Class: Over mature
Retention Value: Low
TPZ Radius (m): 6.24 **TPZ encroachment %:**
SRZ Radius (m): 2.8 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments: suppressed tree

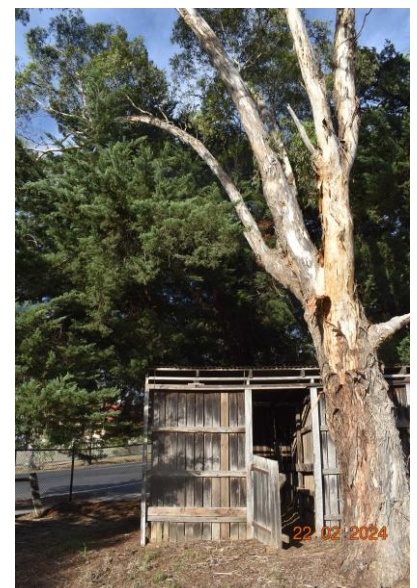


Tree ID 9

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 14 **Health:** Fair
Width (m): 10 **Structure:** Fair
DBH (cm): 66 **ULE:** 6-10
Dia. @ base (cm): 78
Age Class: Over mature
Retention Value: Moderate
TPZ Radius (m): 7.92 **TPZ encroachment %:**
SRZ Radius (m): 3.0 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

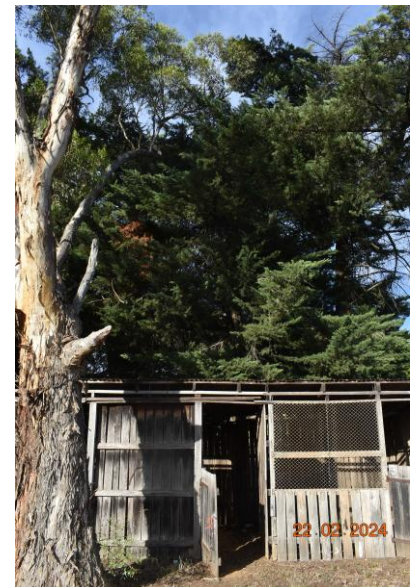
Comments: at rear of stable, restricted location



Tree ID 10

Botanical Name: *Hesperocyparis macrocarpa*

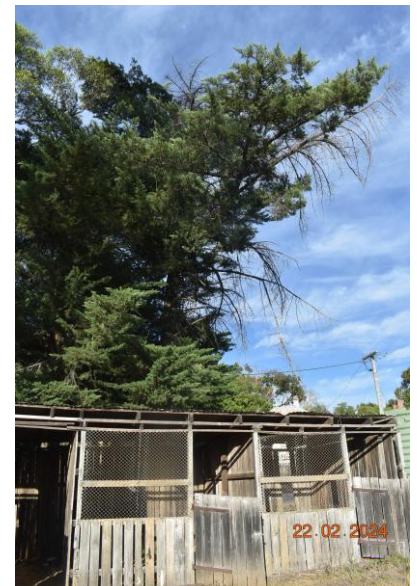
Common Name Monterey Cypress **Origin:** Exotic
Height (m): 14 **Health:** Poor
Width (m): 8 **Structure:** Fair
DBH (cm): 51 **ULE:** 6-10
Dia. @ base (cm): 61
Age Class: Over mature
Retention Value: Moderate
TPZ Radius (m): 6.12 **TPZ encroachment %:**
SRZ Radius (m): 2.7 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained
Comments: at rear of stable, restricted location



Tree ID 11

Botanical Name: *Hesperocyparis macrocarpa*

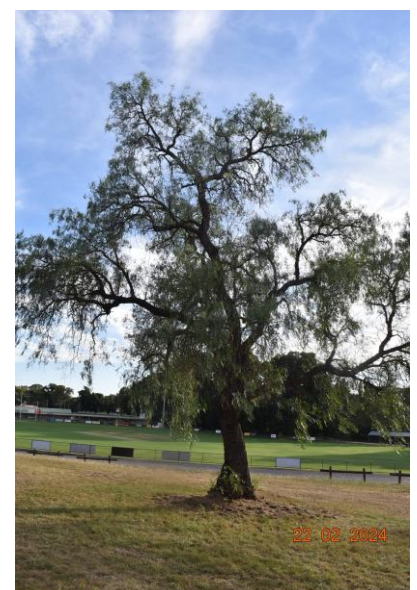
Common Name Monterey Cypress **Origin:** Exotic
Height (m): 14 **Health:** Poor
Width (m): 8 **Structure:** Fair
DBH (cm): 51 **ULE:** 1-5
Dia. @ base (cm): 63
Age Class: Over mature
Retention Value: Low
TPZ Radius (m): 6.12 **TPZ encroachment %:**
SRZ Radius (m): 2.7 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained
Comments: at rear of stable, restricted location



Tree ID 12

Botanical Name: *Schinus molle*

Common Name Peppercorn Tree **Origin:** Exotic
Height (m): 9 **Health:** Fair
Width (m): 8 **Structure:** Fair
DBH (cm): 51 **ULE:** 20+
Dia. @ base (cm): 65
Age Class: Mature
Retention Value: Moderate
TPZ Radius (m): 6.12 **TPZ encroachment %:**
SRZ Radius (m): 2.8 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained
Comments:

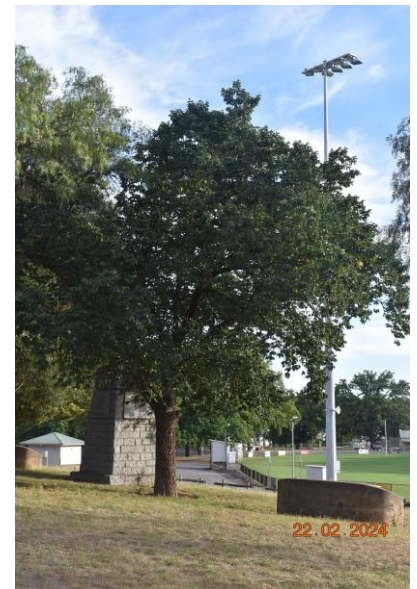


Tree ID 13

Botanical Name: *Ulmus xhollandica*

Common Name Dutch Elm **Origin:** Exotic
Height (m): 8 **Health:** Fair
Width (m): 8 **Structure:** Fair
DBH (cm): 42 **ULE:** 20+
Dia. @ base (cm): 48
Age Class: Mature
Retention Value: Moderate
TPZ Radius (m): 5.04 **TPZ encroachment %:**
SRZ Radius (m): 2.4 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

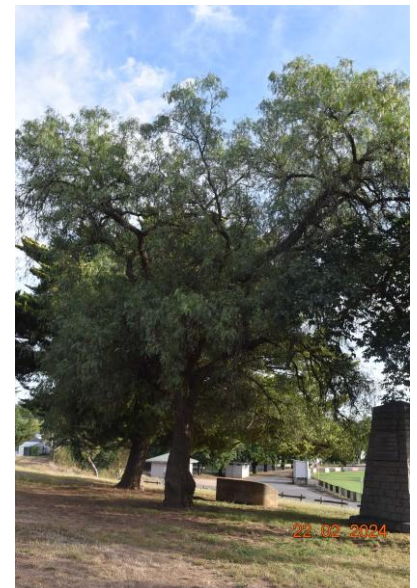


Tree ID 14

Botanical Name: *Schinus molle*

Common Name Peppercorn Tree **Origin:** Exotic
Height (m): 9 **Health:** Fair
Width (m): 9 **Structure:** Fair
DBH (cm): 49 **ULE:** 20+
Dia. @ base (cm): 66
Age Class: Mature
Retention Value: Moderate
TPZ Radius (m): 5.88 **TPZ encroachment %:**
SRZ Radius (m): 2.8 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

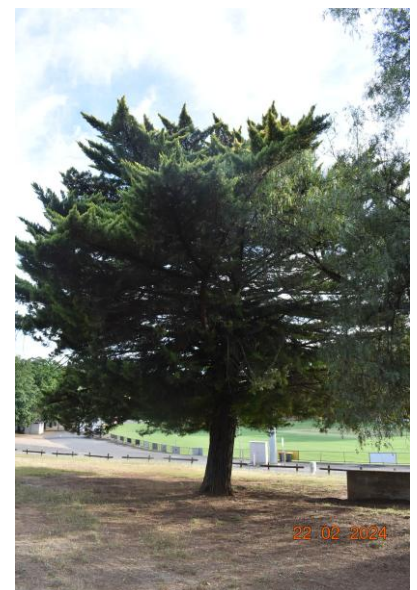


Tree ID 15

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 10 **Health:** Fair
Width (m): 11 **Structure:** Fair
DBH (cm): 64 **ULE:** 11-20
Dia. @ base (cm): 72
Age Class: Mature
Retention Value: Moderate
TPZ Radius (m): 7.68 **TPZ encroachment %:**
SRZ Radius (m): 2.9 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments: tap is embedded in trunk, cultivar is 'Horizontalis Aurea'

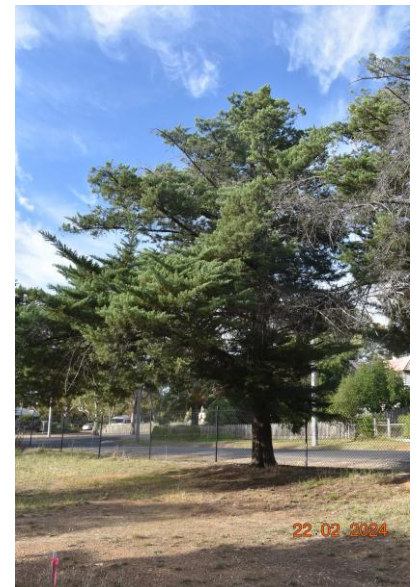


Tree ID 16

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 11 **Health:** Poor
Width (m): 7 **Structure:** Fair
DBH (cm): 50 **ULE:** 6-10
Dia. @ base (cm): 62
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 6 **TPZ encroachment %:**
SRZ Radius (m): 2.7 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:



Tree ID 17

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 11 **Health:** Very poor
Width (m): 5 **Structure:** Poor
DBH (cm): 47 **ULE:** 1-5
Dia. @ base (cm): 59
Age Class: Severe decline
Retention Value: Low
TPZ Radius (m): 5.64 **TPZ encroachment %:**
SRZ Radius (m): 2.7 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

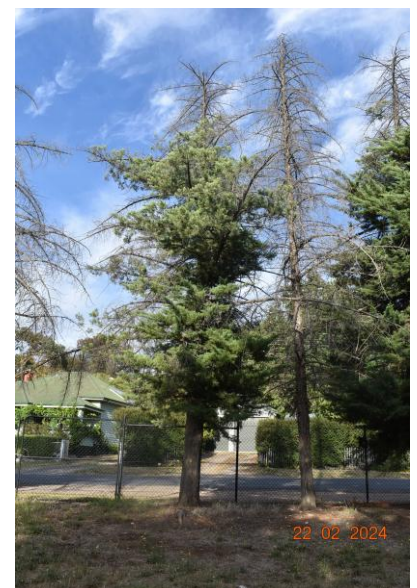


Tree ID 18

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 11 **Health:** Poor
Width (m): 5 **Structure:** Poor
DBH (cm): 40 **ULE:** 0
Dia. @ base (cm): 47
Age Class: Severe decline
Retention Value: None
TPZ Radius (m): 4.8 **TPZ encroachment %:**
SRZ Radius (m): 2.4 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

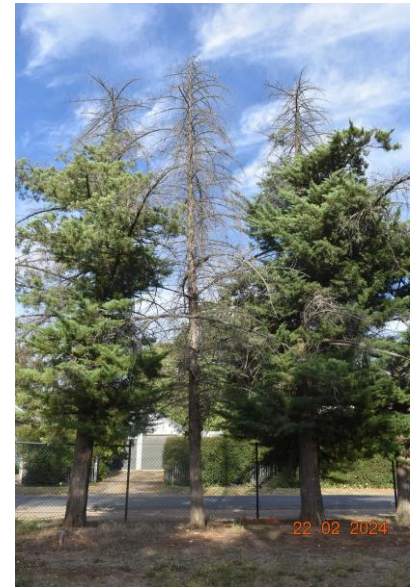


Tree ID 19

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 11 **Health:** Dead
Width (m): 4 **Structure:** Very Poor
DBH (cm): 23 **ULE:** 0
Dia. @ base (cm): 30
Age Class: Severe decline
Retention Value: None
TPZ Radius (m): 2.76 **TPZ encroachment %:**
SRZ Radius (m): 2.0 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

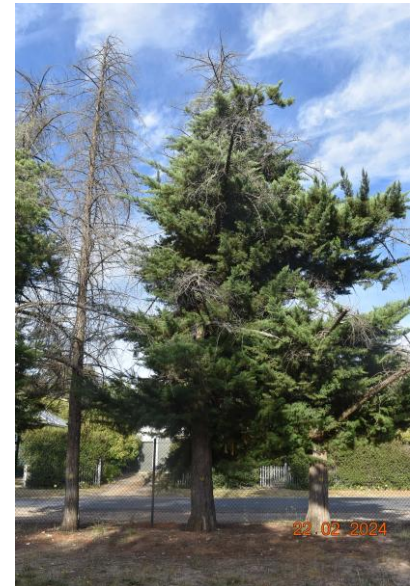


Tree ID 20

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 11 **Health:** Poor
Width (m): 6 **Structure:** Poor
DBH (cm): 39 **ULE:** 1-5
Dia. @ base (cm): 48
Age Class: Over mature
Retention Value: None
TPZ Radius (m): 4.68 **TPZ encroachment %:**
SRZ Radius (m): 2.4 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

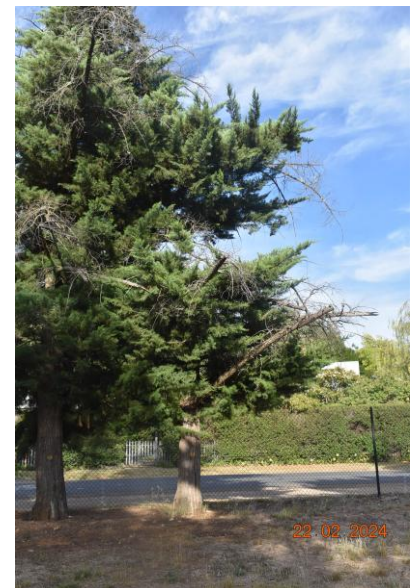


Tree ID 21

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 5 **Health:** Very poor
Width (m): 6 **Structure:** Poor
DBH (cm): 33 **ULE:** 1-5
Dia. @ base (cm): 40
Age Class: Over mature
Retention Value: None
TPZ Radius (m): 3.96 **TPZ encroachment %:**
SRZ Radius (m): 2.3 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

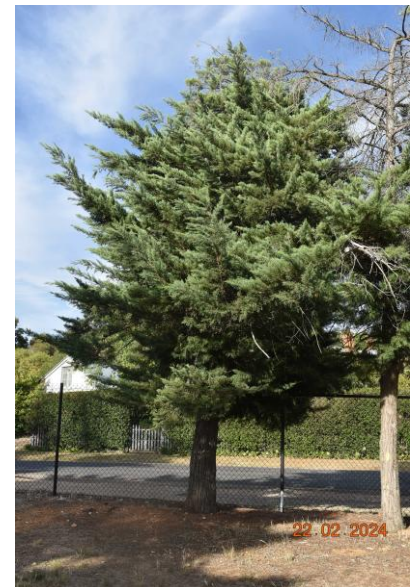


Tree ID 22

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 8 **Health:** Poor
Width (m): 6 **Structure:** Poor
DBH (cm): 31 **ULE:** 6-10
Dia. @ base (cm): 38
Age Class: Over mature
Retention Value: None
TPZ Radius (m): 3.72 **TPZ encroachment %:**
SRZ Radius (m): 2.2 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

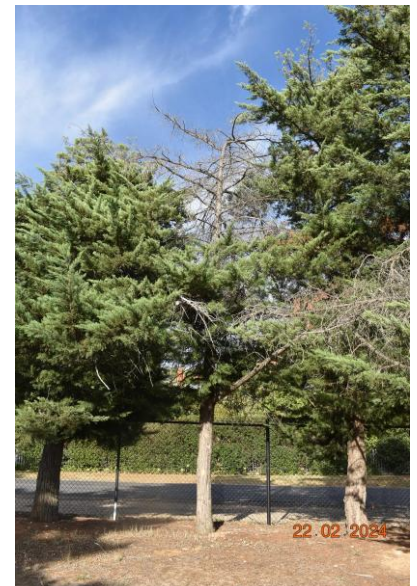


Tree ID 23

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 7 **Health:** Very poor
Width (m): 5 **Structure:** Poor
DBH (cm): 23 **ULE:** 0
Dia. @ base (cm): 30
Age Class: Severe decline
Retention Value: Low
TPZ Radius (m): 2.76 **TPZ encroachment %:**
SRZ Radius (m): 2.0 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

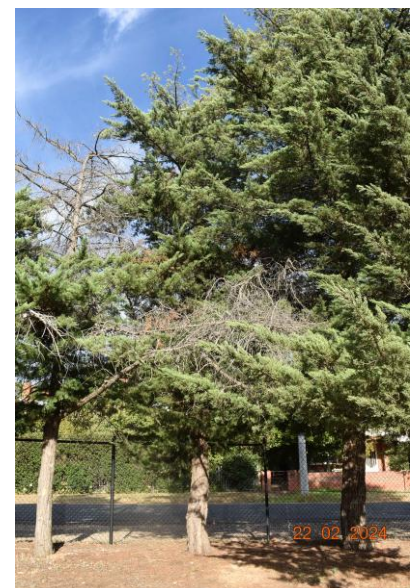


Tree ID 24

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 9 **Health:** Poor
Width (m): 5 **Structure:** Poor
DBH (cm): 27 **ULE:** 6-10
Dia. @ base (cm): 34
Age Class: Over mature
Retention Value: None
TPZ Radius (m): 3.24 **TPZ encroachment %:**
SRZ Radius (m): 2.1 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

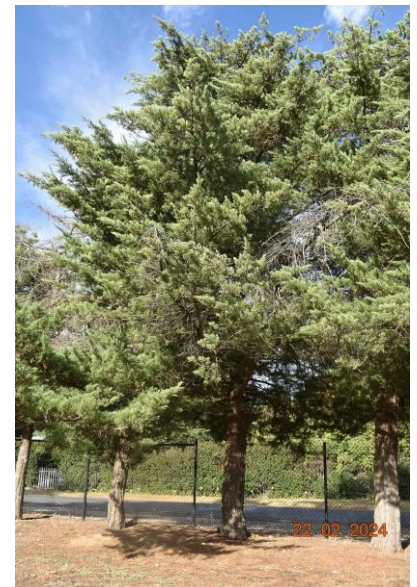


Tree ID 25

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 10 **Health:** Fair
Width (m): 7 **Structure:** Fair
DBH (cm): 37 **ULE:** 6-10
Dia. @ base (cm): 44
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 4.44 **TPZ encroachment %:**
SRZ Radius (m): 2.3 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

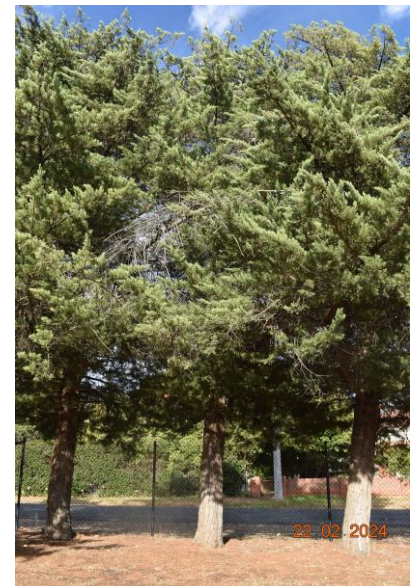


Tree ID 26

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 10 **Health:** Fair
Width (m): 6 **Structure:** Fair
DBH (cm): 37 **ULE:** 6-10
Dia. @ base (cm): 45
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 4.44 **TPZ encroachment %:**
SRZ Radius (m): 2.4 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

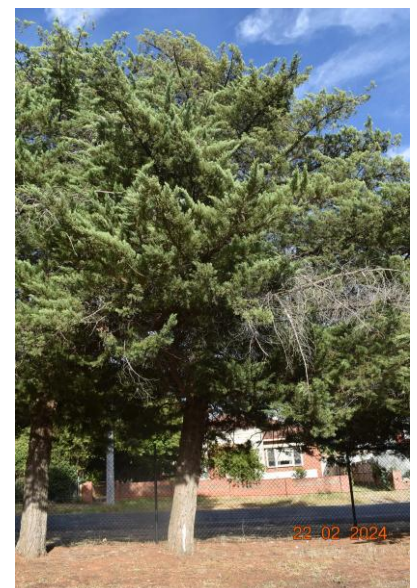


Tree ID 27

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 9 **Health:** Fair
Width (m): 7 **Structure:** Fair
DBH (cm): 39 **ULE:** 6-10
Dia. @ base (cm): 43
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 4.68 **TPZ encroachment %:**
SRZ Radius (m): 2.3 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

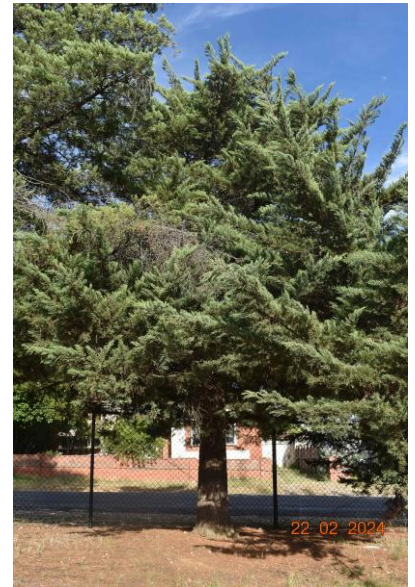


Tree ID 28

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 7 **Health:** Fair
Width (m): 7 **Structure:** Fair
DBH (cm): 37 **ULE:** 6-10
Dia. @ base (cm): 44
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 4.44 **TPZ encroachment %:**
SRZ Radius (m): 2.3 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:

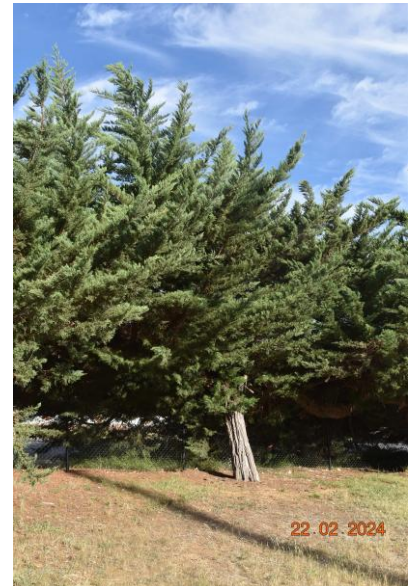


Tree ID 29

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 6 **Health:** Fair
Width (m): 7 **Structure:** Poor
DBH (cm): 36 **ULE:** 1-5
Dia. @ base (cm): 42
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 4.32 **TPZ encroachment %:**
SRZ Radius (m): 2.3 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:



Tree ID 30

Botanical Name: *Hesperocyparis macrocarpa*

Common Name Monterey Cypress **Origin:** Exotic
Height (m): 6 **Health:** Fair
Width (m): 8 **Structure:** Poor
DBH (cm): 60 **ULE:** 1-5
Dia. @ base (cm): 72
Age Class: Mature
Retention Value: Low
TPZ Radius (m): 7.2 **TPZ encroachment %:**
SRZ Radius (m): 2.9 **SRZ intrusion:** No
Encroachment Level: None **Outcome:** Retained

Comments:



Tree ID 31

Botanical Name: *Eucalyptus leucoxylon*

Common Name Yellow Gum **Origin:** Indigenous

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

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

DBH (cm): 28 **ULE:** 11-20

Dia. @ base (cm): 32

Age Class: Mature

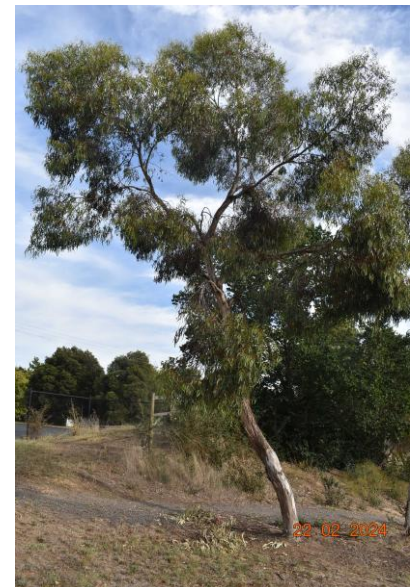
Retention Value: Moderate

TPZ Radius (m): 3.36 **TPZ encroachment %:**100

SRZ Radius (m): 2.1 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:



Tree ID 32

Botanical Name: *Eucalyptus leucoxylon*

Common Name Yellow Gum **Origin:** Indigenous

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

Width (m): 4 **Structure:** Fair

DBH (cm): 17 **ULE:** 11-20

Dia. @ base (cm): 22

Age Class: Mature

Retention Value: Low

TPZ Radius (m): 2.04 **TPZ encroachment %:**100

SRZ Radius (m): 1.8 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:



Tree ID 33

Botanical Name: *Eucalyptus leucoxylon*

Common Name Yellow Gum **Origin:** Indigenous

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

Width (m): 4 **Structure:** Fair

DBH (cm): 17 **ULE:** 11-20

Dia. @ base (cm): 23

Age Class: Mature

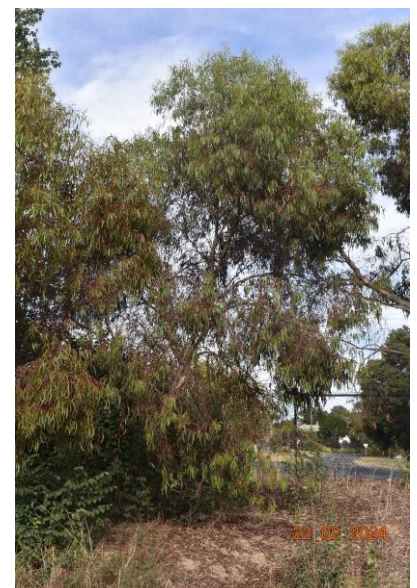
Retention Value: Low

TPZ Radius (m): 2.04 **TPZ encroachment %:**100

SRZ Radius (m): 1.8 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:



Tree ID 34

Botanical Name: *Eucalyptus leucoxylon*

Common Name Yellow Gum **Origin:** Indigenous

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

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

DBH (cm): 27 **ULE:** 11-20

Dia. @ base (cm): 32

Age Class: Mature

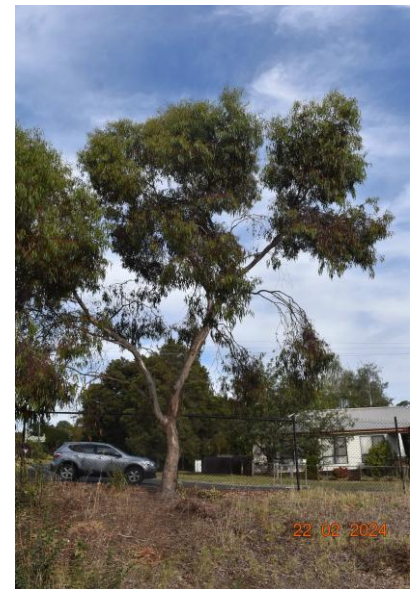
Retention Value: Moderate

TPZ Radius (m): 3.24 **TPZ encroachment %:**100

SRZ Radius (m): 2.1 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments:



Tree ID 35

Botanical Name: *Ulmus xhollandica*

Common Name Dutch Elm **Origin:** Exotic

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

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

DBH (cm): 32 26 **ULE:** 11-20

Dia. @ base (cm): 52

Age Class: Mature

Retention Value: Low

TPZ Radius (m): 5.52 **TPZ encroachment %:**100

SRZ Radius (m): 2.5 **SRZ intrusion:** Yes

Encroachment Level: Major **Outcome:** Lost

Comments: masses of suckers beneath



Tree ID 36

Botanical Name: *Quercus robur*

Common Name English Oak **Origin:** Exotic

Height (m): 18 **Health:** Good

Width (m): 18 **Structure:** Good

DBH (cm): 84 **ULE:** 20+

Dia. @ base (cm): 99

Age Class: Mature

Retention Value: High

TPZ Radius (m): 10.08 **TPZ encroachment %:**15

SRZ Radius (m): 3.3 **SRZ intrusion:** No

Encroachment Level: Major **Outcome:** Retained

Comments:



Tree ID 37

Botanical Name: *Quercus robur*

Common Name English Oak

Origin: Exotic

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

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

DBH (cm): 34 23 **ULE:** 20+

Dia. @ base (cm): 37 27

Age Class: Mature

Retention Value: Moderate

TPZ Radius (m): 4.92 **TPZ encroachment %:** 7

SRZ Radius (m): 2.4 **SRZ intrusion:** No

Encroachment Level: Minor **Outcome:** Retained

Comments:

