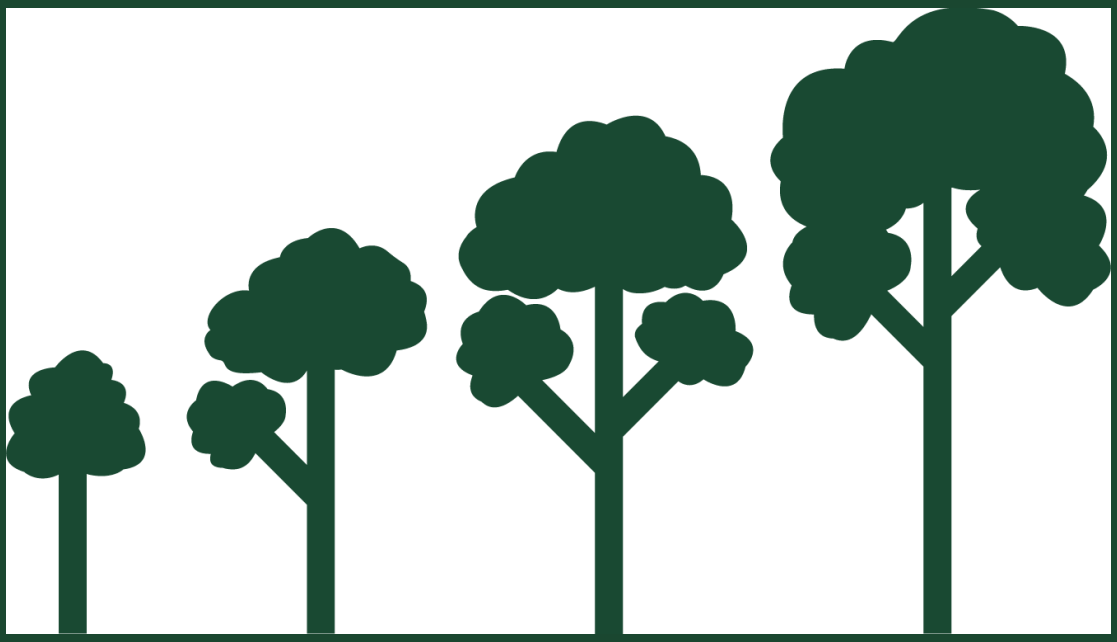
Temporal
TREE MANAGEMENT

Arboricultural Impact Assessment



Western Sydney University, Milperra Campus
Childcare Centre Alterations and Additions
NSW, 2214
2/-/DP1291984
Job No: 240166
17/12/2024

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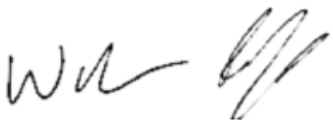
SCOPE and LIMITATIONS

This report has been prepared for *Mirvac Homes (NSW) Pty. Ltd.* This report has been prepared as a supporting document of the proposed alteration of the existing childcare centre within the north-eastern boundary of the Western Sydney University Milperra campus at 2 Bullecourt Avene, Milperra. This report provides an assessment of the impact on seventy trees positioned inside and adjacent to the proposed works area.

The author of this report is *Temporal Tree Management Pty Ltd.* All observations, recommendations and advice expressed in this report are based on the measured tree dimensions and ground-based visual assessment data collected during the site inspections on 07/05/2024, 05/06/2024 and 25/09/2024. Recommendations provided in this report are made in relation to *the Australian Standard for the Protection of Trees on Development Sites (AS 4970 2009).*

This report is not designed for any other purpose. The author accepts no responsibility for the use of this report for purposes other than as an Arboricultural Impact Assessment or if used by any other person / party. The collection of tree data and the preparation of this report have been undertaken without prejudice.

All observations, recommendations and advice expressed within this report are based on *the Australian Standard for the Protection of Trees on Development Sites (AS 4970 2009),* the professional experience of the author, information gathered during the site assessments and information provided by the client. Trees are dynamically growing organisms that change over time. Recommendations provided in this report reflect the information within the supporting documentation and the condition of the assessed trees on the days of assessment. No guarantee is implied with respect to future tree condition or safety beyond the advice and recommendations within the report.



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17th December 2024

1. Executive Summary

The purpose of this report is to provide an Arboricultural Impact Assessment for the trees located inside and within 5 metres of proposed development of the childcare centre and surrounding roads within the north-eastern boundary of the Western Sydney University Milperra Campus. Seventy trees are included in this assessment.

An assessment of the trees within and adjacent to the subject site was undertaken by William Dunlop of *Temporal Tree Management Pty Ltd* on 07/05/2024, 05/06/2024 and 25/09/2024. Tree data tables are provided in **Appendix H.** Tree retention values were determined using the Tree Retention Values Assessment Methodology (Morton 2011). Determination of development impacts and recommended tree protection measures are drawn from the *Australian Standard for the Protection of Trees on Development Sites* (AS4970 2009).

Tree Retention Values

Retention Values Determined for Seventy Assessed Trees			
Very Low	Low	Moderate	High
Tree 121	Trees 80, 86, 87, 88, 89, 106, 109, 110 and 575	Trees 6, 57, 58, 59, 60, 61, 79, 84, 102, 111, 117, 118, 119 and 120	Trees 1-5, 7, 8, 15-20, 56, 62-78, 81-83, 85, 108, 112-115, 178, 179, 194, 199, 200 and 202

The retention value of the assessed trees was determined using the Tree Retention Values Assessment Methodology (Morton 2011). Forty-six assessed trees were determined to be of High retention value. Fourteen trees were determined to be of Moderate retention value. Nine trees were determined to be of Low retention value within the surrounding landscape while one tree was determined to be of Very Low retention value.

Impact of Proposed Development

Impact of TPZ Encroachments on Seventy Assessed Trees					
N/A (0%)	Low (<10%)	Moderate (>10%<20%)	High (>20%<30%)	Severe (>30%)	Total (100%)
Trees 6, 8, 57-60, 64, 66-76, 79, 82, 83, 84, 102, 179, 194, 199, 200 and 202	Trees 1, 4, 5, 7, 15, 20, 65, 77, 78, 115 and 178	Trees 2 and 81	Tree 63	Tree 62	Trees 3, 16, 17, 18, 19, 56, 61, 80, 85, 86, 87, 88, 89, 106, 108, 109, 110, 111, 112, 113, 114, 117, 118, 119, 120, 121 and 575

The stems of twenty-seven trees are within with the footprint of proposed bulk earthworks areas required for drainage pathway installation, internal and external road upgrades and the construction of a new driveway and carpark for the childcare centre. Four trees will sustain major TPZ encroachments of greater than 10%. The impact of the major encroachments sustained by Trees 62, 63 and 81 was accurately determined during a Root Mapping Assessment (Section 7 of this report). This assessment determined that the proposed works within the TPZs of these three trees will not impact their viability within the landscape. The major encroachment sustained by Tree 2 was determined to be acceptable due to its reduced percentage (12% of its TPZ area) and the good health observed for this tree. Eleven trees will sustain tolerable minor TPZ encroachments. Twenty-eight trees included in this assessment will not be directly impacted by the proposed works.

Tree Removal Schedule

Retention Values of Twenty-seven Trees Proposed for Removal			
Very Low	Low	Moderate	High
Tree 121	Trees 80, 86, 87, 88, 89, 106, 109, 110 and 575	Trees 61, 111, 117, 118, 119 and 120	Trees 3, 16, 17, 18, 19, 56, 85, 108, 112, 113 and 114

Twenty-seven trees will require removal to facilitate the proposed development. Twenty-one trees are positioned within the footprint of the proposed bulk earthworks for the internal road upgrades, five trees are positioned within the proposed drainage pathway and one tree is positioned within the footprint of the proposed driveway for the new childcare centre carpark (Table 5) (Figure 6).

Trees 80, 109 and 575 are positioned within the subject site and were measured to be less than 5 metres in height. Tree 121 has died and does not contain any observed hollows. These four trees are not protected under *Chapter 2.3 of the City of Canterbury Bankstown DCP (2023).* These trees may therefore be removed without prior consent from the City of Canterbury Bankstown Council. The twenty-three remaining trees proposed for removal are prescribed trees under *Chapter 3.2 of the City of Canterbury Bankstown DCP (2023).* Consent for the removal of these trees must be obtained as part of the Conditions of Consent for the proposed development.

Forty-three trees are suitable for retention as part of the proposed development. Protection measures for these forty-three trees are specified in Section 8.3 of this report must be established in accordance with Section 4 of AS4970 (2009) (Figure 23).

2. Site Information

2.1. Site Location

The subject site for this Arboricultural Impact Assessment (AIA) is the area surrounding the existing childcare centre within the north-eastern corner of the Western Sydney University Milperra Campus at 2 Bullecourt Avenue, Milperra (2/-/DP1291984) (Figure 1). The western and southern portion of the subject site is positioned within an R1 General Residential Zone. The central portion of the subject site contains the existing childcare centre within a B1 Neighbourhood Centre zone, while the eastern portion of the site is within a C2 Environmental Conservation zone (Planning NSW 2024) (**Appendix A**).

This report has relied upon the following plans and documents:

- *Proposed Site Plan*, prepared by Envision Group Pty Ltd. (Project No: 194, Drawing No: DA-06, Rev: I, drawn: 11/12/2024).
- *Functional Layout Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Drawing No: 910, Rev: P4, drawn: 23/09/24.
- *Layout and Benching Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Ref: 315, Drawing No: 010, Rev: B, drawn: 12/12/24.
- *Bulk Earthworks Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Ref: 315, Drawing No: 015, Rev: B, drawn: 12/12/24.
- *Arboricultural Impact Assessment* prepared for all trees within the Western Sydney University Milperra campus by *Temporal Tree Management Pty Ltd.* (01/10/2024).

2.2. Relevant Policy Controls

The subject site is located within the City of Canterbury Bankstown local government area. All land within the subject site is within is managed by the City of Canterbury Bankstown. The environmental policy regulations relevant to the trees within and surrounding the subject site are drawn from *the NSW State Environmental Planning Policy (SEPP) (Biodiversity and Conservation) 2021.* Management of the trees within the subject site falls under the control of the City of Canterbury Bankstown.

The policy controls governing the management of the trees within the City of Canterbury Bankstown are outlined in *Chapter 2 - Site Considerations, Part 3 - 'Tree Management' of the Canterbury Bankstown Development Control Plan (BDCP 2023).* This policy control supports the guidelines outlined in the

Canterbury Bankstown Local Environmental Plan (BLEP 2023). These controls draw from *the Australian Standard for the Protection of Trees on Development Sites* (AS4970 2009) and *the Australian Standard for Pruning Amenity Trees* (AS4373 2007).

The subject site is entirely within an identified Endangered Ecological community (SEED 2024) (**Appendix A**). *Cumberland Plains Woodland* in the Sydney Basin Bioregion (as described in the final determination of the Scientific Committee to list the ecological community) is listed as an Endangered Ecological Community under *the Biodiversity Conservation Act 2016* and under *the Environment Protection and Biodiversity Conservation Act 1999* of the Commonwealth (NSW Dept. of Planning and Environment 2021).

The subject site is close to but is not within the Ashford Avenue and Bullecourt Avenue Heritage Items (Planning NSW 2024) (**Appendix A**). The subject site contains Biodiversity Values and Terrestrial Biodiversity Mapped areas (Planning NSW 2024) (**Appendix A**). The subject site is not within a Bushfire Prone Land zone (Planning NSW 2024).

The assessed trees were determined to be of increased Landscape Significance due to their indigenous species value within the identified EEC, Biodiversity Values Mapped Area and Terrestrial Biodiversity zone within the subject site.

2.3. Tree Locations and Diversity

As stipulated in the *Chapter 2.3 of the Canterbury Bankstown DCP (2023)*, woody vegetation was prescribed as a 'tree' if its height exceeded 5 metres (City of Canterbury Bankstown Council 2024). All trees within the Ashford Avenue grassed verge, regardless of size were included in this assessment due to the position of the subject site within a Heritage Item or Biodiversity Values Mapped Area (City of Canterbury Bankstown Council 2024). All trees inside and within 5 metres of proposed works within the subject site were included in this assessment. Seventy trees were included in this assessment (**Appendix H**).

The ownership of the trees varied. Trees 1, 2, 4-8, 73 and 84 are positioned outside the north-eastern boundary of the site within a heavily vegetated conservation area. Trees 57-72, 74-79 and 81-83 are positioned within the property surrounding the existing childcare centre. Trees 3, 15-20, 80-89, 102,106-115, 117-121, 178, 179, 194, 199, 200, 202 and 575 are within the north-eastern boundary

of the Western Sydney University Milperra campus (2/-/DP1291984).

The species distribution of the assessed trees varied (Table 4). Thirteen species were observed in this assessment. Four indigenous species were observed during this assessment. The forty-four assessed trees of these four species are likely to be remnant or remnant progeny of the Cumberland Plains Woodland vegetation formation. Eight native species that are non-indigenous to the subject site were observed. The eighteen trees / tree groups of these seven species are likely to be planted specimens or progeny of planted trees. Two exotic species were observed. The eight trees/tree groups from these two species have been planted as ornamental trees within or adjacent to the subject site.

Table 4. Range of species and number of assessed trees within each.

Scientific Name	Common Name	Locally Indigenous	Native	Scheduled Weed	Number of Trees
Eucalyptus fibrosa	Broad-leaved Red Ironbark	Yes	Yes	No	6
Eucalyptus tereticornis	Forest Red Gum	Yes	Yes	No	14
Eucalyptus moluccana	Grey Box	Yes	Yes	No	14
Eucalyptus crebra	Narrow-leaved Ironbark	Yes	Yes	No	10
Angophora floribunda	Rough-barked Apple	No	Yes	No	1
Eucalyptus microcorys	Tallowood	No	Yes	No	1
Corymbia citriodora	Lemon-scented Gum	No	Yes	No	4
Eucalyptus saligna	Sydney Blue Gum	No	Yes	No	3
Eucalyptus scoparia	Wallangarra White Gum	No	Yes	No	5
Corymbia maculata	Sydney Blue Gum	No	Yes	No	1
Eucalyptus sideroxylon	Red Ironbark	No	Yes	No	1
Callistemon rugulosus	Scarlett Bottlebrush	No	Yes	No	1
Cedrus deodara	Himilayan Cedar	No	Yes	No	1
Pyrus calleryana	Ornamental Pear	No	No	No	8

3. Site Development Plans

The proposed development work relevant to this assessment entails alteration and addition to the existing childcare centre within the north-western corner of the Western Sydney University Childcare Centre (Figure 1 and Figure 2).

The footprint of the existing childcare centre will be expanded on the northern and southern sides. Access to the centre will also be upgraded under the proposed plan. A new vehicle crossing, driveway and parking area proposed to be built within the eastern boundary of the subject site with new pedestrian pathways connecting to the refurbished childcare centre. The existing recycled water tanks and shed within the north-eastern corner of the site are proposed to be demolished to facilitate the new carpark (Figure 3 and Figure 4).

The existing internal roads on the southern and western sides of the childcare centre and the intersection with Horsley Road are proposed to be upgraded as part of this development to suit the increased potential traffic flow. Installation of a new stormwater drainage system from the south-western of the childcare centre and adjacent roads to a new drainage basin outside the western boundary of the site is also required as part of this development (Figure 1). Bulk earthworks will be required for the proposed carpark, internal and external road upgrades and the installation of the new drainage system (Figure 6).

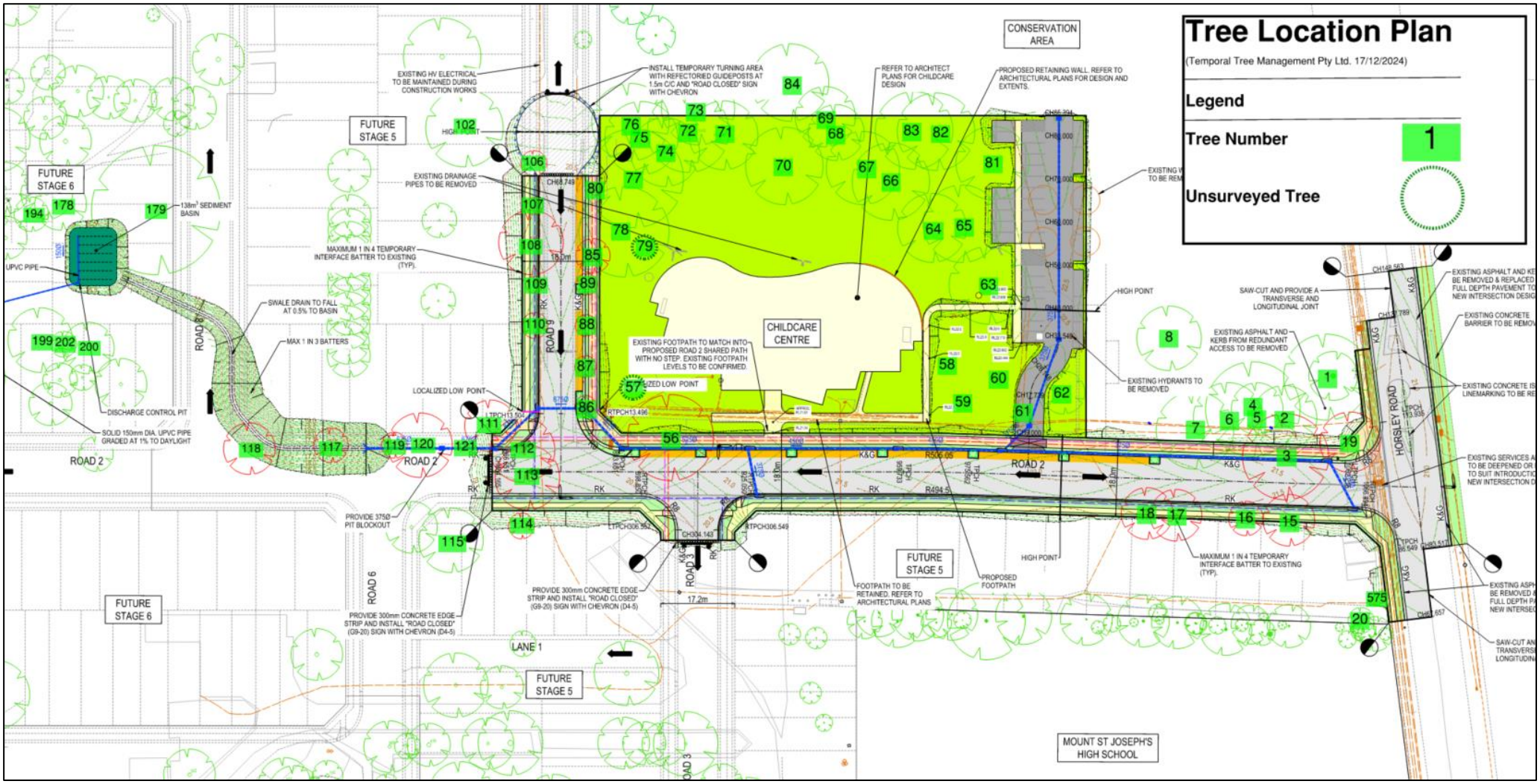

Figure 1. Proposed development plans within subject site. *Functional Layout Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Drawing No: 910, Rev: P4, drawn: 23/09/24. Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

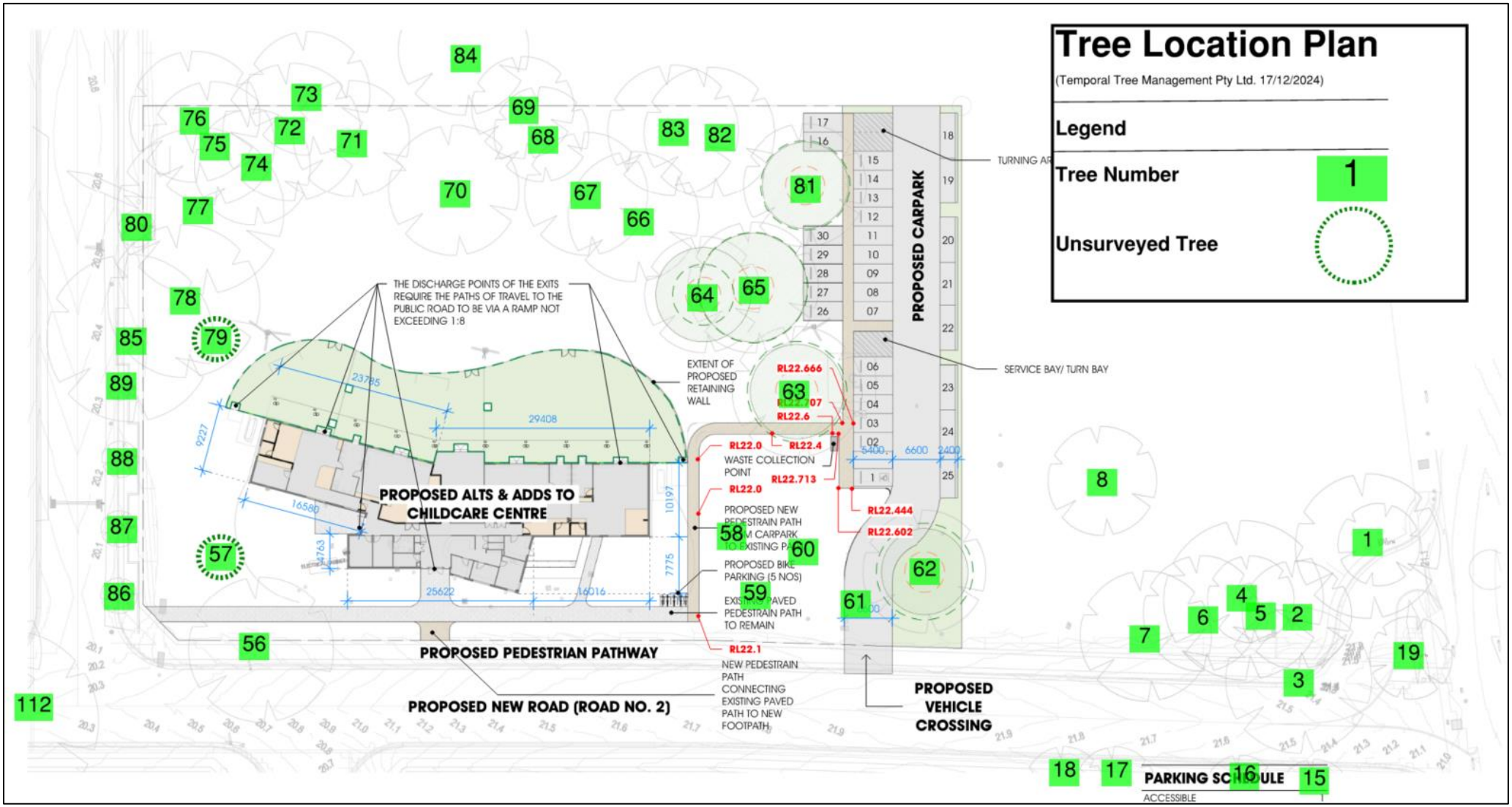

Figure 1. Proposed alterations and additions to existing childcare centre. *Proposed Site Plan*, prepared by Envision Group Pty Ltd. (Project No: 194, Drawing No: DA-06, Rev: I, drawn: 11/12/2024). Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

Figure 3. Position of Trees 58-62 within the southern portion of the subject site.

Figure 4. Position of Trees 63-65 and 81 within the northern portion of the subject site.

4. Preliminary Assessment

4.1 Assessment Methodology

A ground-based visual assessment of the seventy trees within and adjacent to the proposed works area was undertaken by William Dunlop of *Temporal Tree Management Pty Ltd.* on 03 and on 07/05/2024, 05/06/2024 and 25/09/2024. Tree data tables are provided in **Appendix H.** T

Ø Tree Number Schedule: Seventy trees are included in this assessment. The tree number schedule from the *Arboricultural Impact Assessment* prepared by *Temporal Tree Management Pty Ltd.* (01/10/2024) was used in this assessment. Numbered tree tags were installed on assessed trees / tree groups when feasible. Tags were not installed on trees positioned outside the property boundaries of the subject site or in unreachable positions within the site.

Tree groups were formed for closely positioned specimens of the same size and species that are suitable for collective management. **One** group of closely positioned specimens of the same size and species was included in this assessment (Tree 575).

Ø Genus and species Vegetation was identified and described using scientific names.

Ø Common Name: One common is provided.

Ø Maturity: **Juvenile, Semi – mature, Mature or Over Mature**. Judgement on these four categories was determined by professional knowledge and existing research on the species present.

Ø Height: Estimated in metres.

Ø Canopy Width: The diameter of each tree's canopy was estimated in metres from two planes.

Ø Diameter at Breast Height (DBH): DBH was measured at 1.4 metres height and is described in centimetres. The DBH of the largest specimen in a group was applied to all trees in that group.

Ø Diameter at Root Flare (DRF): DRF was measured at the height of the trees' root flare and is described in centimetres. The DRF of the largest specimen in a group was applied to all trees.

Ø Health: **Dead, Poor, Fair, Good or Excellent**. Professional experience along with the visual vitality index established by Johnston et al. (2012) was used to underpin this category **(Appendix B).**

Ø Structure: **Failed, Very Poor, Poor, Fair, Good or Excellent**. Professional experience along with Visual Tree Assessment methodology established by Mattheck and Breloar (1994) was used to underpin this category.

Ø Habitat Observed: **Stick Nest, Dray, Hollow or Possible Hollow**. Observation of potential bird or arboreal mammal habitat within the assessed trees was noted as part of the Visual Tree Assessment methodology.

Ø Useful Life Expectancy (ULE): This estimate provides an important estimate of a tree's remaining safe life span within a landscape (Barrell 1996). Estimates are based on species knowledge and an individual's structure, health and position within the landscape. ULE estimate categories used were: **Long** (>40 years), **Medium** (between 15 and 40 years), **Short** (between 5 and 15 years), **Negligible** (Less than 5 years) or **Dead** (less than 12 months). A framework for the ULE determination methodology is provided in **Appendix E** (Barrell 1996).

Ø Landscape Value: **Significant** (1), **Very High** (2), **High** (3), **Moderate** (4), **Low** (5), **Very Low** (6), **Insignificant** (7). These categories account for each tree's size, ecological significance as a food or habitat resource, structural integrity, visual prominence within the landscape and any additional heritage or protection controls that may be relevant to it. A framework for the Landscape Significance determination methodology is provided in **Appendix D** (Morton 2011).

Ø Retention Value: **High, Moderate, Low and Very Low**. ULE and Landscape Significance categories were used for each tree to determine their retention value. The retention and protection of trees determined to be of **High** retention value should be prioritised for any proposed development within the subject site. Trees determined to be of **Moderate** retention value should be retained and protected if feasible. The retention of trees determined to be of **Low** retention value should not obstruct any proposed development within the subject site. Tree determined to be of **Very Low** retention value should be removed as part of any development within the site. A framework for the Retention Value priorities is provided in **Appendix C** (Morton 2011).

Ø Tree Protection Zone Radius (R_{TPZ}): A Tree Protection Zone is a circular area surrounding a tree that provides the principal means of protecting trees on development sites. Tree Protection Zones aim to prevent soil compaction, contamination and physical damage to trees above and below ground through the exclusion of all development activity from within the specified radius (Matheny and Clark 1994). A Tree Protection Zone (TPZ) radius (R_{TPZ}) may be calculated using the equation from the Australian Standard for the Protection of Trees on Development Sites (AS 4970 2009):

$$\mathbf{R_{(TPZ)} = DBH \times 12.}$$

Ø Structural Root Zone Radius (R_{SRZ}): This measure provides an indication of the portion of a tree's root plate that is considered fundamentally important for the maintenance of basal anchorage. The volume of root plate estimated within an SRZ is not related to the physiological viability of a tree (Mattheck and Breloer 1994). It is important to note that SRZ area is not an absolute figure. Rather, it is an estimate based on a line of best fit drawn from research relating to observation of tree failures within forested areas. The SRZ area must therefore be viewed as an approximation that may be smaller or greater in size depending on site conditions and the vitality of individual assessed trees. The SRZ radius (R_{SRZ}) may be calculated using the equation from the *Australian Standard for the Protection of Trees on Development Sites* (AS 4970 2009):

$$\mathbf{R_{(SRZ)} = (DRF \times 50)^{0.42} \times 0.64}$$

The tree protection zone radius (R_{TPZs}) and structural root zone radius (R_{SRZs}) were calculated as *per Section 3 of AS4970 (2009)* (Figure 5). The R_{TPZ} and R_{SRZ} for the seventy assessed trees are provided in **Appendix H** and Figure 6.

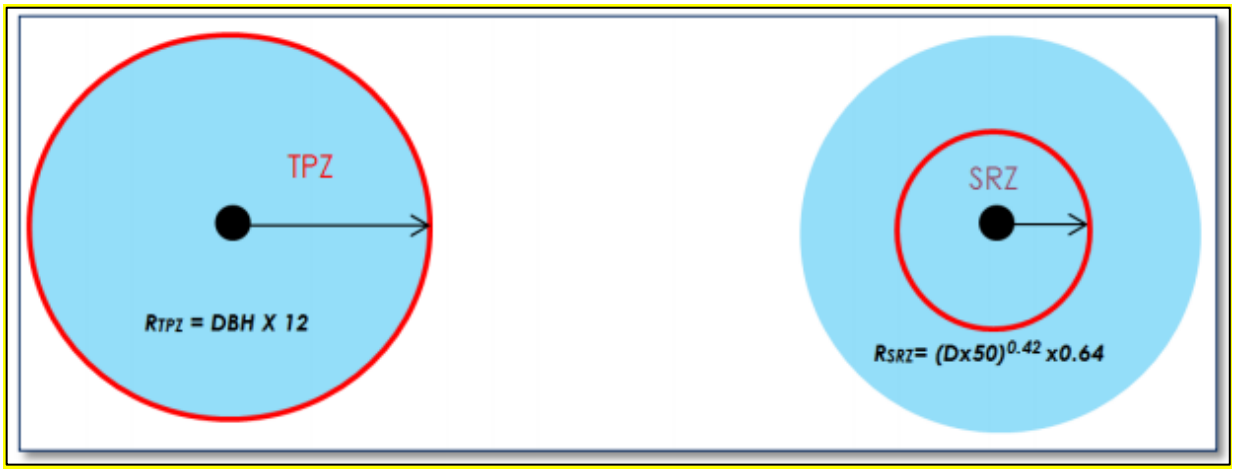

Figure 5. TPZ and SRZ radial measurement equations.

5. Tree Data Summary

Forty-seven trees (Trees 1-5, 7, 8, 15-20, 56, 62-78, 81-83, 85, 108, 112-115, 178, 179, 194, 199, 200 and 202) were determined to be of High Retention Value within the surrounding landscape (**Table 1**). The indigenous species significance and larger size underpinned the Very High Landscape Value determined for the majority of the High Retention value trees. The large size, good condition and native species value underpinned the High Landscape Significance determined for the remaining High retention value trees.

The increased proportion of High retention value assessed trees reflects the density of indigenous vegetation within the site. The position of these indigenous trees within identified Cumberland Plains Woodland renders them of High or Very High landscape significance (**Appendix H**).

Fourteen trees (Trees 6, 57, 58, 59, 60, 61, 79, 84, 102, 111, 117, 118, 119 and 120) were determined to be of Moderate retention value (Table 1). A reduction in landscape significance was determined for the majority of these trees due to the smaller size of the indigenous or native specimens or the reduced species significance of planted native or exotic specimens. Shortened ULE estimates for the majority of these trees were underpinned by observations of poor health or structural defects. These factors reduced retention rating determined for these trees.

Nine trees (Trees 80, 86, 87, 88, 89, 106, 109, 110 and 575) were determined to be of Low retention value within the surrounding landscape. All seven trees are small, planted trees of ornamental species that were determined to be of Low landscape significance. This underpinned the Low retention value ratings determined for them.

One assessed tree has died (Tree 121) and was therefore determined to be on Very Low retention value (Table 1). This small dead tree should be removed as part of any proposed development within the subject site.

6. Impact of Development

6.1. TPZ Encroachments

A TPZ encroachment is the proportional area of a tree's TPZ that will be absorbed, disturbed or exposed as part of a development. As defined in *Sections 3.3.2 and 3.3.3 of AS4970 (2009),* minor TPZ encroachments are less than 10% of a trees' TPZ area while major TPZ encroachments exceed 10%.

Minor encroachments of less than 10% of the total TPZ area may occur without the site presence of the Project Arborist providing there is an equal compensation of protected area elsewhere adjacent to the TPZ. The potential impact on the viability of tree with a TPZ encroachment that is less than 10% is defined as Low in this assessment.

Major encroachments of more than 10% of the total TPZ area may occur if it can be demonstrated that the impact of the encroachment is mitigated or won't impact the viability of the affected tree. The impact of a major TPZ encroachment that is between 10-20% is defined as Moderate in this assessment and is generally considered to be acceptable providing the tree's condition is shown to be Good/Fair, it can be shown that the affected tree will remain viable. The impact on the viability of tree with a major TPZ encroachment that is between 20-30% is defined as High in this assessment. The impact of a major encroachment within this range may compromise the viability of an impacted tree. Retention under a High impact major TPZ encroachment must demonstrate mitigation of impact from existing infrastructure and / or demonstrate it by through a Root Mapping Assessment to show that the affected tree will remain viable. Modification of the design plan may be required to mitigate the impact of the encroaching structure. There must also be an equal compensation of protected area elsewhere adjacent to the TPZ.

The impact on the viability of tree with a major TPZ encroachment that is greater than 30% is defined as Severe in this assessment. Major encroachments of this magnitude are likely to impact a tree's health and may impact the structural integrity of their root plate. Retention under such encroachments is unacceptable unless there will be significant mitigation of impact from existing infrastructure and / or it can be shown through a Root Mapping Assessment and significant mitigation of the impact. Modification of the design plan may be required to mitigate the impact of the encroaching structure. There must also be an equal compensation of protected area elsewhere adjacent to the TPZ. Existing structural features that will remain unchanged or require no additional excavation were not included in the encroachments calculated for the nineteen assessed trees.

6.2. Impact of Proposed Works on Assessed Trees

Table 5. Summarized impacts of TPZ encroachments associated with the proposed development calculated for seventy assessed trees. Tree data sheets are provided in **Appendix H.**

Tree	SRZ Encroached	Encroachment (%)	Impact	Mitigation	Proposed Management
1	No	4	Low	Tree will sustain a minor encroachment within the eastern portion of its TPZ during shallow fill works for the Horsley Road upgrade. The unencraoched area adjacent to the northern and western sides of this tree's TPZ will suitably compensate for this minor encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
2	No	12	Moderate	Tree will sustain a major encroachment within the southern portion of its TPZ during shallow excavation works required for internal road upgrade. The unencraoched area adjacent to the northern of this tree's TPZ will suitably compensate for this minor encroachment. Tree's good health suggests it will suitably tolerate this major encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
3	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
4	No	5	Low	Tree will sustain a minor encroachment within the southern portion of its TPZ during shallow excavation works required for internal road upgrade. The unencraoched area adjacent to the northern of this tree's TPZ will suitably compensate for this minor encroachment. Tree's good health suggests it will suitably tolerate this major encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
5	No	2	Low	Tree will sustain a minor encroachment within the southern portion of its TPZ during shallow excavation works required for internal road upgrade. The unencraoched area adjacent to the northern of this tree's TPZ will suitably compensate for this minor encroachment. Tree's good health suggests it will suitably tolerate this major encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
6	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
7	No	2	Low	Tree will sustain a minor encroachment within the southern portion of its TPZ during shallow excavation works required for internal road upgrade. The unencraoched area adjacent to the northern of this tree's TPZ will suitably compensate for this minor encroachment. Tree's good health suggests it will suitably tolerate this major encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
8	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
15	No	4	Low	Tree will sustain a minor encroachment within the eastern portion of its TPZ during the construction of the proposed carpark. The tree's good health suggests it will tolerate encroachment within its TPZ. The unencraoched area adjacent to the northern and western sides of this tree's TPZ will suitably compensate for this minor encroachment.	**Retain.** Undertake Root Mapping Assessment in accordance with Section 3.3.4 of AS4970 (2009). Install tree protection measures compliant with Section 4 of AS4970 (2009).
16	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
17	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
18	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
19	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.

Table 5. Summarized impacts of TPZ encroachments associated with the proposed development calculated for seventy assessed trees. Tree data sheets are provided in **Appendix H.**

Tree	SRZ Encroached	Encroachment (%)	Impact	Mitigation	Proposed Management
20	No	**2**	Low	Tree will sustain a minor encroachment within the north-eastern portion of its TPZ during shallow excavation works required for internal road upgrade. The unencraoched area adjacent to the northern of this tree's TPZ will suitably compensate for this minor encroachment. Tree's good health suggests it will suitably tolerate this major encroachment.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
56	Yes	**100**	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
57	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
58	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
59	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
60	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
61	Yes	**100**	Total	Stem is within footprint of proposed driveway.	**Remove**. Tree proposed for removal to facilitate earthworks.
62	Yes	**32**	Severe	Tree will sustain a major encroachment within the western portion of its TPZ during the construction of the proposed driveway. The tree's good health suggests it will tolerate encroachment within its TPZ. The replacement of the existing driveway on the eastern side of the tree's stem with turf will provide comensation for the encroached area.	**Retain.** Undertake Root Mapping Assessment in accordance with Section 3.3.4 of AS4970 (2009). Install tree protection measures compliant with Section 4 of AS4970 (2009).
63	No	**25**	High	Tree will sustain a major encroachment within the southern portion of its TPZ during construction of a new pedestrian pathway and construction of the proposed carpark. The encroachment within the eastern edge of its TPZ will be mitigated by the replacement of the existing shed foundation, which is likely to have restricted eastern root growth from this tree.	**Retain.** Undertake Root Mapping Assessment in accordance with Section 3.3.4 of AS4970 (2009). Install tree protection measures compliant with Section 4 of AS4970 (2009).
64	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
65	No	8	Low	Tree will sustain a minor encroachment within the eastern portion of its TPZ during the construction of the proposed carpark. The tree's good health suggests it will tolerate encroachment within its TPZ. The encroachment within the eastern edge of its TPZ will be mitigated by the replacement of the existing shed foundation, which is likely to have restricted eastern root growth from this tree.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
66	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
67	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
68	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).

Table 5. Summarized impacts of TPZ encroachments associated with the proposed development calculated for seventy assessed trees. Tree data sheets are provided in **Appendix H.**

Tree	SRZ Encroached	Encroachment (%)	Impact	Mitigation	Proposed Management
69	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
70	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
71	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
72	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
73	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
74	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
75	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
76	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
77	No	6	Low	Tree will sustain a minor encroachment within the western portion of its TPZ during the construction of the proposed carpark. The tree's good health suggests it will tolerate encroachment within its TPZ. Unencroached eastern portion of its TPZ will suitably compensate for encroached area.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
78	No	5	Low	Tree will sustain a minor encroachment within the western portion of its TPZ during the construction of the proposed carpark. The tree's good health suggests it will tolerate encroachment within its TPZ. Unencroached eastern portion of its TPZ will suitably compensate for encroached area.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
79	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
80	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
81	No	19	Moderate	Tree will sustain a major encroachment within its TPZ during shallow fill works required for the construction of the proposed carpark. The tree's good health suggests it will tolerate encroachment within its TPZ. The unencraoched area adjacent to the northern and western sides of this tree's TPZ will suitably compensate for this minor encroachment.	**Retain.** Undertake Root Mapping Assessment in accordance with Section 3.3.4 of AS4970 (2009). Install tree protection measures compliant with Section 4 of AS4970 (2009).
82	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
83	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
84	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).

Table 5. Summarized impacts of TPZ encroachments associated with the proposed development calculated for seventy assessed trees. Tree data sheets are provided in **Appendix H.**

Tree	SRZ Encroached	Encroachment (%)	Impact	Mitigation	Proposed Management
85	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
86	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
87	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
88	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
89	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
102	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
106	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
108	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
109	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
110	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
111	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
112	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
113	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
114	Yes	100	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.
115	No	7	Low	Tree will sustain a minor encroachment within the north-eastern portion of its TPZ during shallow fill works required for internal road upgrade. The tree's good health suggests it will tolerate encroachment within its TPZ. Unencroached southern portion of its TPZ will suitably compensate for encroached area.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
117	Yes	100	Total	Stem is within footprint of proposed drainage pathway.	**Remove**. Tree proposed for removal to facilitate earthworks.
118	Yes	100	Total	Stem is within footprint of proposed drainage pathway.	**Remove**. Tree proposed for removal to facilitate earthworks.
119	Yes	100	Total	Stem is within footprint of proposed drainage pathway.	**Remove**. Tree proposed for removal to facilitate earthworks.
120	Yes	100	Total	Stem is within footprint of proposed drainage pathway.	**Remove**. Tree proposed for removal to facilitate earthworks.
121	Yes	100	Total	Stem is within footprint of proposed drainage pathway.	**Remove**. Tree proposed for removal to facilitate earthworks.
178	No	8	Low	Tree will sustain a minor encroachment within the south-eastern portion of its TPZ during excavation required for the proposed drainage basin. The tree's good health suggests it will tolerate encroachment within its TPZ. Unencroached northern portion of its TPZ will suitably compensate for encroached area.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
179	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
194	N/A	0	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).

Table 5. Summarized impacts of TPZ encroachments associated with the proposed development calculated for seventy assessed trees. Tree data sheets are provided in **Appendix H.**

Tree	SRZ Encroached	Encroachment (%)	Impact	Mitigation	Proposed Management
199	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
200	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
202	N/A	**0**	N/A	Tree will not be directly impacted by proposed development.	**Retain.** Install tree protection measures compliant with Section 4 of AS4970 (2009).
575	Yes	**100**	Total	Stem is within footprint of bulk earthworks area.	**Remove**. Tree proposed for removal to facilitate earthworks.

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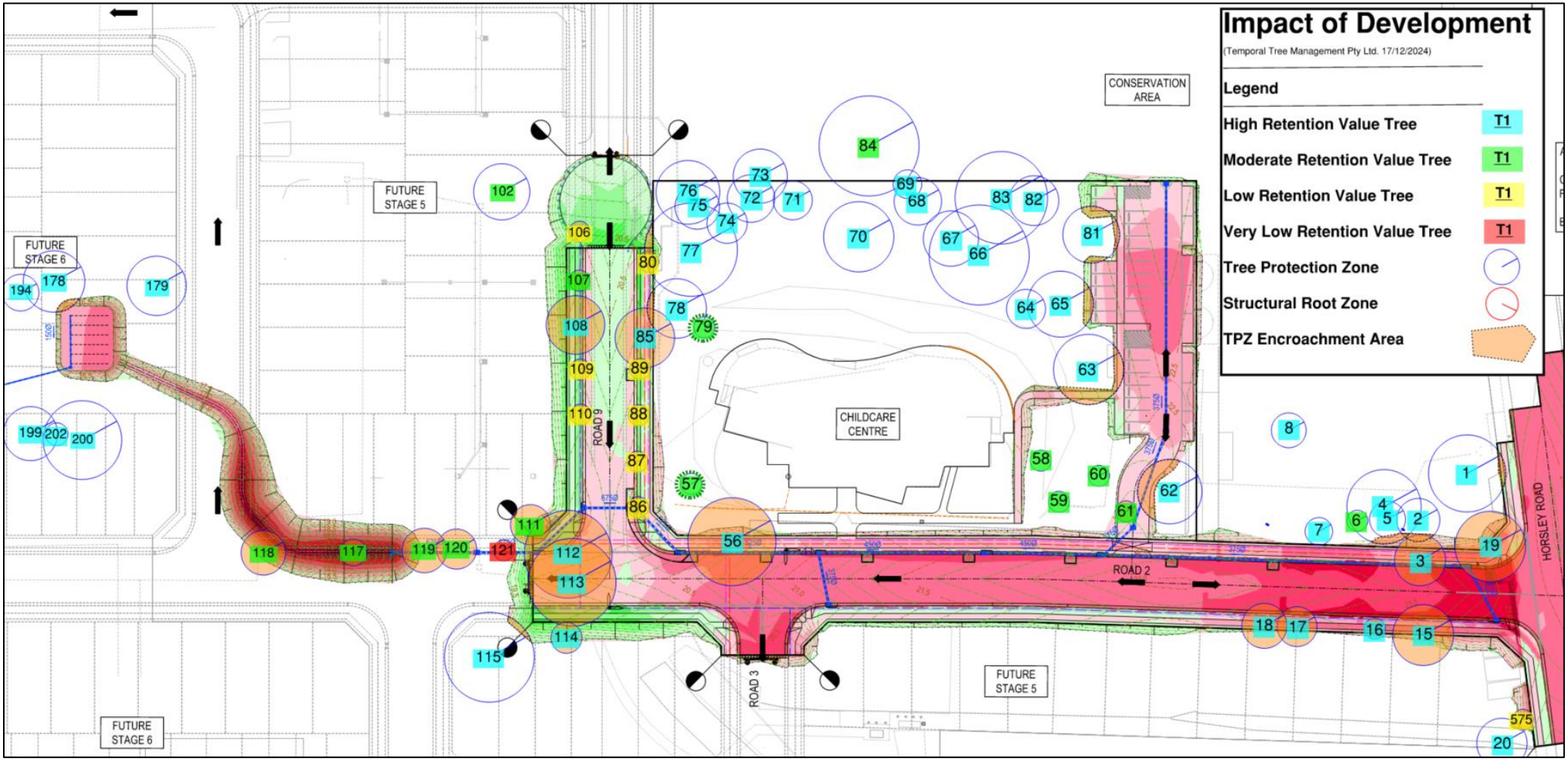

Figure 6. Retention values, TPZs and Encroachments for seventy assessed trees. Proposed development plans. *Bulk Earthworks Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Ref: 315, Drawing No: 015, Rev: B, drawn: 12/12/24. Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

Figure 7. Mitigating factor within the eastern portion of the TPZ of Tree 63.

7. Root Mapping Assessment

A Root Mapping Assessment compliant with *Section 3.3.4 of AS4970 (2009)* was undertaken by *Temporal Tree Management Pty Ltd.* on 05/07/2024 to accurately assess the impact of the major encroachment sustained by Tree 1.

7.1 Root Mapping Methodology

Three root-mapping survey trenches were non-destructively excavated during the site assessment (Figure 8). The three root mapping survey trenches were excavated using a shovel and hydro-vac with a fan nozzle on a low-pressure setting only in accordance with *Section 3.3.4 of AS4970 (2009)*.

All major tree roots (diameter of or greater than 40mm) were protected and retained during this non-destructive excavation. Only minor tree roots of 15 mm or greater were suitably protected and retained as part of this excavation. Roots of less than 15mm diameter were preserved where possible but were not included in this assessment.

Encountered and preserved tree roots were numbered. The diameter of each encountered tree root and depth within the survey trench were measured in mm. Linear distance from a specified edge of the trench was measured in metres to describe the encountered roots' positions within the survey trench. All encountered roots were preserved after root mapping data was collected and both survey trenches were backfilled with the existing soil.

7.2 Survey Trenches

Survey Trench 1 was excavated along the portion of the eastern edge of the proposed driveway that is within the TPZ of Tree 62 (Figure 8). Survey Trench 2 was excavated along the portion of the northern edge of the proposed pedestrian walkway that is within the TPZ of Tree 63 (Figure 8). Survey Trench 3 was excavated along the portion of the eastern edge of the proposed carpark that is within the TPZ of Tree 81 (Figure 9). Excavation to a depth of up to 400mm will be required for the construction of the proposed driveway, pedestrian walkway and carpark. Survey Trenches 1-3 were therefore excavated to a depth of 400mm (Figure 9).

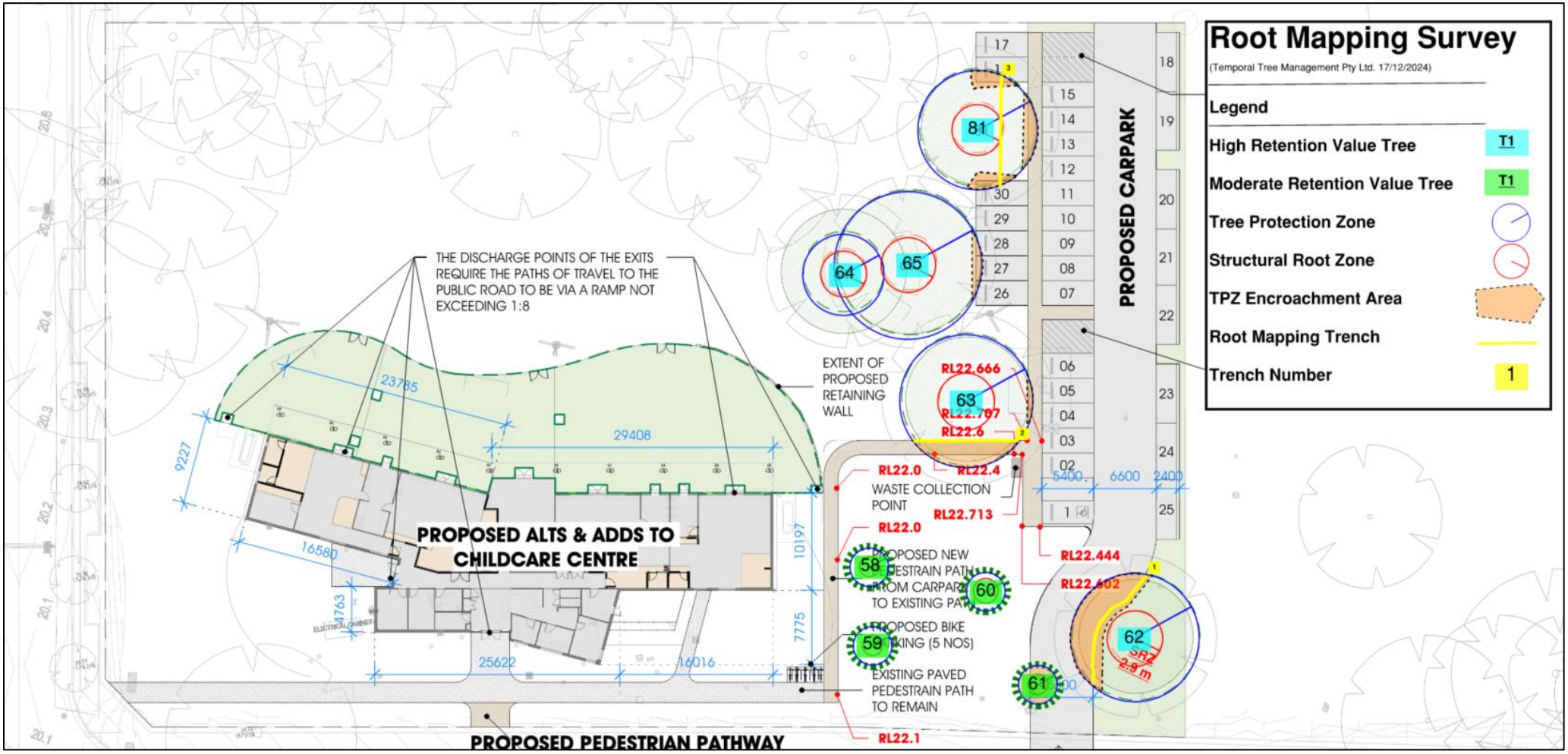

Figure 8. Position of three survey trenches that was non-destructively excavated within the TPZs of Trees 62, 63 and 81. *Proposed Site Plan*, prepared by Envision Group Pty Ltd. (Project No: 194, Drawing No: DA-06, Rev: I, drawn: 11/12/2024). Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

Figure 9. Survey Trenches 1-3 were excavated to 400mm depth in accordance with *Section 3.3.4 of AS4970 (2009).*

7.3 Root Mapping Results

7.3.1 Trench 1

There were only two tree roots encountered in Survey Trench 1 (Table 6) (Figure 10 - Figure 13). Both were minor roots with a measured diameter of 20mm.

The heavy clay soil encountered within Survey Trench 1 is likely to have encouraged deep root growth from Tree 62, which may explain the low number of encountered roots (Gilman 1990, Day et al. 2010). Due to their small size, it is unlikely that severing Root 1 or Root 2 will impact the viability of Tree 62.

The findings from Root Survey Trench 1 determine that pruning Roots 1 and 2 to facilitate the construction of the new driveway will have a negligible impact on Tree 62, Due to the indigenous species significance of Tree 63 within an identified EEC, approval to prune Roots 1 and 2 must obtained from the City of Canterbury Bankstown Council. If approved, root pruning must be undertaken by the Project Arborist using a handsaw in accordance with *AS4373 (2007)* (p. 18).

Table 6. Root mapping results from Survey Trench 1.

Root	Distance from Northern edge of trench (m)	Diameter of root (mm)	Depth of root [mm]	Comments
1	0.4	20	300	Minor root crossing trench laterally. Orientation and root bark suggest root is from Tree 62.
2	7.6	20	240	Minor root crossing trench diagonally. Orientation and root bark suggest root is from Tree 62.

Figure 10. Position of Roots 1 and 2 within Survey Trench 1.

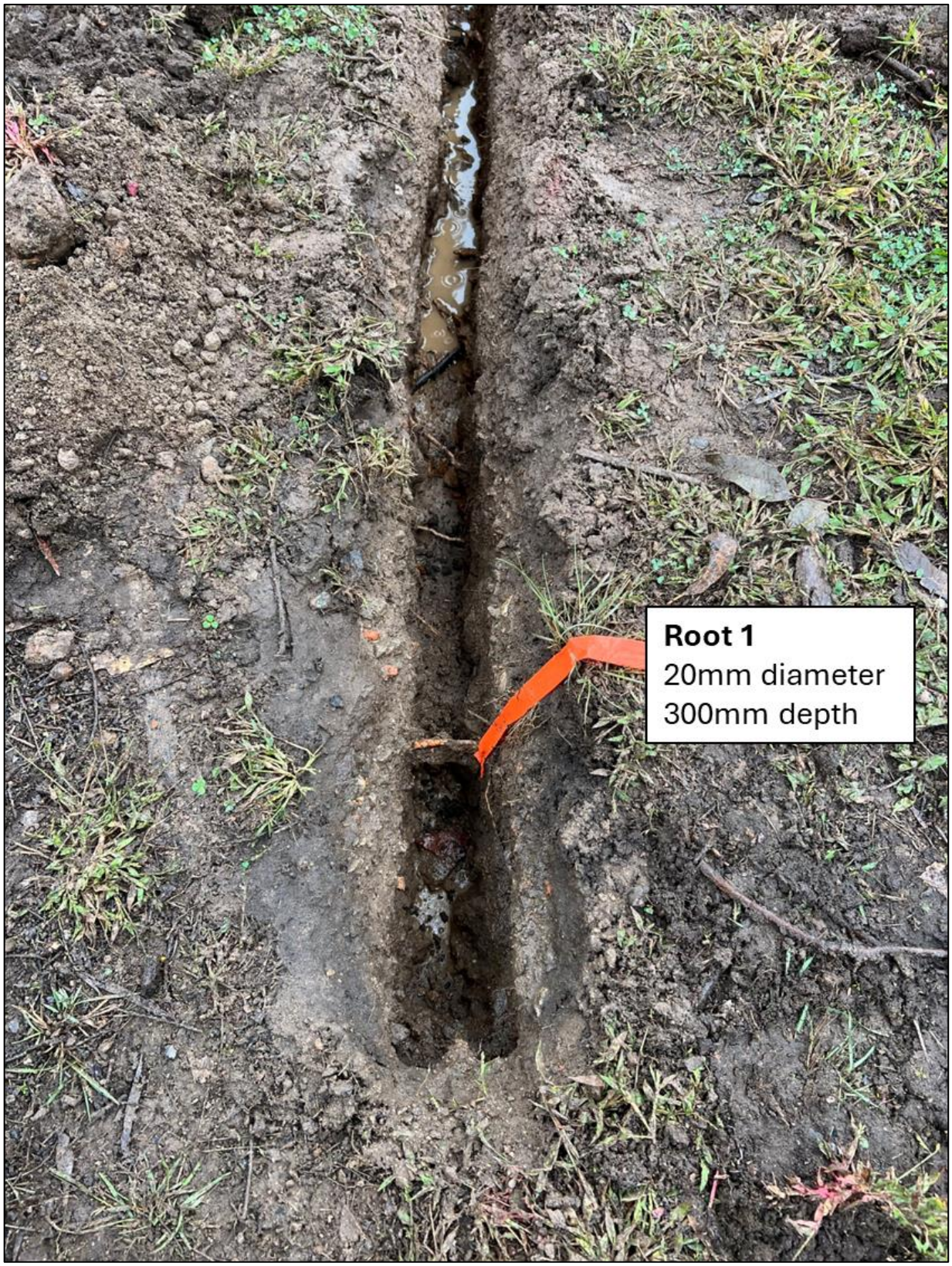

Figure 11. Position of Root 1 within the northern portion of Survey Trench 1.

Figure 12. No tree roots observed within the central portion of Survey Trench 1.

Figure 13. Position of Roots 9-15 within the northern portion and norther edge of Survey Trench 1.

7.3.2 Trench 2

There were only two tree roots encountered in Survey Trench 2 (Table 7) (Figure 14 - Figure 18). Root 3 is a small major root with a measured diameter of 40mm. This major root has extensive tissue necrosis and decay. Close observation of this root suggests that it has died / ceased to function (Figure 17). This major root is unlikely to be contributing to the health or structural integrity of Tree 63. Root 4 is a small minor root.

The heavy clay soil encountered within Survey Trench 2 is also likely to have encouraged deep root growth from Tree 62, which may explain the low number of encountered roots (Gilman 1990, Day et al. 2010). Due to the disfunction of Root 3 and the small size of Root 4, it is unlikely that severing Root 3 or Root 4 will impact the viability of Tree 63.

The findings from Root Survey Trench 2 determine that pruning Roots 3 and 4 to facilitate the construction of the new pedestrian walkway will have a negligible impact on Tree 63, Due to the indigenous species significance of Tree 63 within an identified EEC, approval to prune Roots 3 and 4 must obtained from the City of Canterbury Bankstown Council. If approved, root pruning must be undertaken by the Project Arborist using a handsaw in compliance with *Section 4.5.2 of AS4970 (2009)* and *AS4373 (2007)* (p. 18).

Table 7. Root mapping results from Survey Trench 2.

Root	Distance from Eastern edge of trench (m)	Diameter of root (mm)	Depth of root [mm]	Comments
3	3.1	40	190	Major root crossing trench diagonally. Orientation and position suggests root is from Tree 63. Tree with extensive tissue necrosis and signs of decay, suggesting root has died.
4	6.8	15	150	Minor root crossing trench laterally. Orientation and root bark suggest root is from Tree 63.

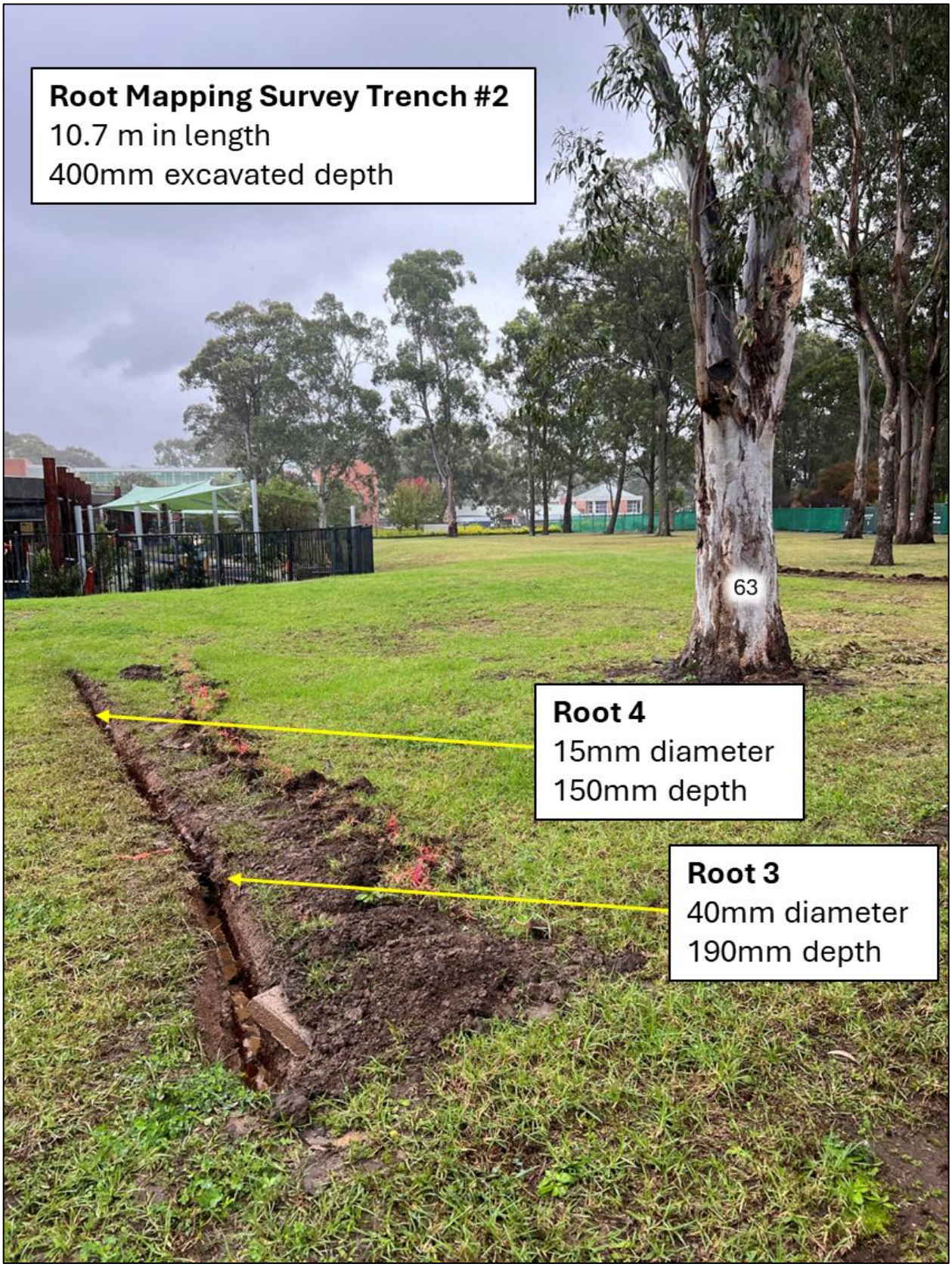

Figure 14 Position of Roots 3 and 4 within Survey Trench 2.

Figure 15. Position of Root 3 within Survey Trench 2.

Figure 16. Root 3 within Survey Trench 2.

Figure 17. Position of Root 4 within Survey Trench 2.

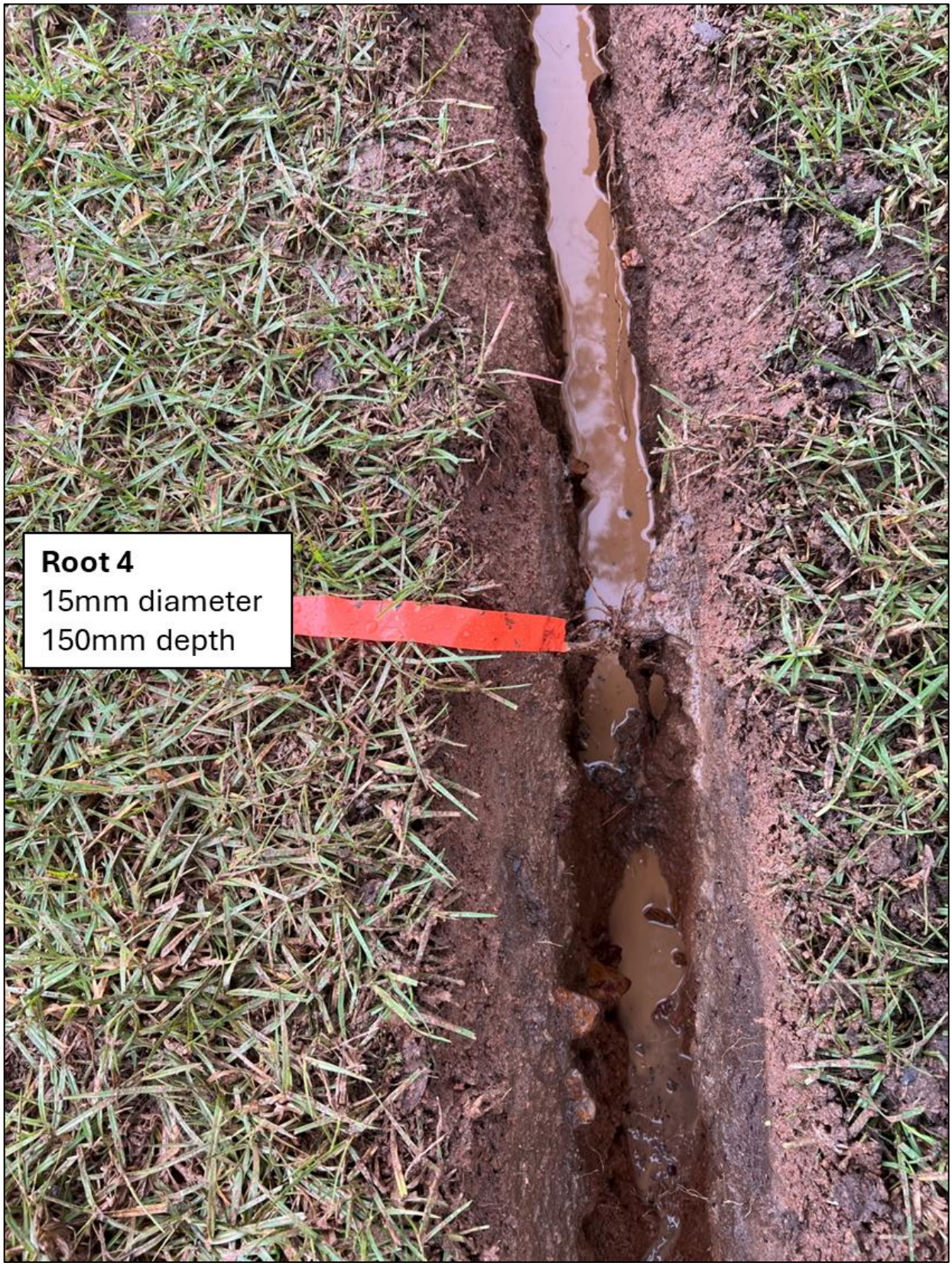

Figure 18. Root 4 within Survey Trench 2.

7.3.3 Trench 3

No tree roots were encountered in Survey Trench 3 (Figure 19 - Figure 21). The heavy clay soil encountered within Survey Trench 3 is also likely to have encouraged deep root growth from Tree 81, which may explain the absence of encountered roots (Gilman 1990, Day et al. 2010). The findings from Survey Trench 3 demonstrate that the construction of the new carpark will not impact Tree 81.

Figure 19. No tree roots with a diameter of greater than 15mm were encountered within Survey Trench 3.

Figure 20. No tree roots with a diameter of greater than 15mm were encountered within the southern and central portion of Survey Trench 3.

Figure 21. No tree roots with a diameter of greater than 15mm were encountered within the northern portion of Survey Trench 3.

8. Tree Protection / Removal Plan

8.1. Tree Removal Schedule

Table 8. Tree removal schedule for the proposed childcare centre development within the Western Sydney University Milperra Campus development. Tree Data Tables are provided in **Appendix H.**

Retention Values of Twenty-seven Trees Proposed for Removal			
Very Low	Low		High
Tree 121	Trees 80, 86, 87, 88, 89, 106, 109, 110 and 575	Trees 61, 111, 117, 118, 119 and 120	Trees 3, 16, 17, 18, 19, 56, 85, 108, 112, 113 and 114

Twenty-seven trees will require removal to facilitate the proposed development (Table 8) (**Appendix H**). Twenty-one trees are positioned within the footprint of the proposed bulk earthworks for the internal road upgrade, five trees are positioned within the proposed drainage pathway and one tree is positioned within the footprint of the proposed driveway for the new carpark (Table 5) (Figure 6). These twenty-seven trees cannot be retained under the proposed design plan.

Of the twenty-seven trees proposed for removal, eleven were determined to be of High retention value within the surrounding landscape, six were determined to be of Moderate retention value, nine were determined to be of Low retention value and one was determined to be of Very Low retention value (Table 8).

Trees 80, 109 and 575 are positioned within the subject site and were measured to be less than 5 metres in height. Tree 121 has died and does not contain any observed hollows. These four trees are not protected under *Chapter 2.3 of the City of Canterbury Bankstown DCP (2023).* These trees may therefore be removed without prior consent from the City of Canterbury Bankstown Council.

The twenty-three remaining trees proposed for removal are prescribed trees under *Chapter 3.2 of the City of Canterbury Bankstown DCP (2023).* Consent for the removal of these trees must be obtained as part of the Conditions of Consent for the proposed development.

If approved, proposed tree removal works should be undertaken by a suitably qualified arborist (minimum AQF Level 3) and must be in compliance with the *Work Safe Guide to Managing Risks of Tree Trimming and Removal Work (2016).*

No signs of hollow presence were observed during the ground-based visual assessments of the twenty-seven trees proposed for removal. However, there may be unseen hollows within the canopies of other trees that were not identified due to the inherent limitations associated with ground-based visual assessments. Tree removal or pruning works must be halted, and an ecologist notified, if any arboreal fauna, active hollows or active nests are encountered. An ecologist and the Project Arborist must be engaged to provide guidance in such cases.

8.2. Tree Protection Measures

Fenced protection zones must be established where possible to delineate construction activities from the TPZs and SRZs of retained trees. Fenced protection zones must be enclosed by 1.8 metre steel fencing that is securely fixed to the ground as stated in *Section 4.3 of AS4970 (2009)* (Figure 21). Shade cloth must be securely fastened to the steel fencing to reduce transport of dust and debris into tree protection areas. Plywood may be used as an alternative if steel fencing cannot be suitably installed. Signage stating the purpose of these exclusion zones should be fixed to the fencing so that it is visible from all points within the site. Coarse-grained wood-chip mulch may be required within a fenced protection zone if specified.

As per *Section 4.2 of AS4970 (2009),* the following activities are not permitted inside delineated protection zones:

(a) Machine excavation including trenching;
(b) Excavation for silt fencing;
(c) cultivation;
(d) storage;
(e) preparation of chemicals, including preparation of cement products;
(f) parking of vehicles and plant;
(g) refuelling;
(h) dumping of waste;
(i) wash down and cleaning of equipment;
(j) placement of fill
(k) lighting of fires;
(l) soil level changes;
(m) temporary or permanent installation of utilities and signs, and
(n) physical damage to the tree.

Once installed, fenced tree protection zones must remain undisturbed for the duration of proposed development works. No services either temporary or permanent are to be located within a specified fenced protection zone. If services are to be located within a Tree Protection Zone, special details will need to be provided by the Project Arborist for tree protection regarding the location of services.

Figure 21. Protection fencing should be erected around the specified perimeter of TPZs in accordance with Section 4.3 of *AS4970 (2009).* Figure 21 a. depicts correctly installed steel or plywood fence panelling (1 and 2) with mulch inside the protection area (3). Figure 21 b. shows depicts protection fencing signage.

Where specified, stem protection measures must be installed on retained trees in situations where the establishment of protection fencing is not feasible. Stem protection measures compliant with *Section 4.5.2 of AS4970 (2009)* may be installed using hessian or carpet underlay padding wrapped around the trees' stems and fixed in place using duct tape. Timber battens (20mm x 100mm) must then be spaced no greater than 150 mm around the stems and fixed to one another using steel strapping. Timber battens must not be fixed directly to the trees' stems (Figure 22).

Temporary access within a fenced protection zone may only occur under the supervision of the Project Arborist. The installation of ground protection measures compliant with *Section 4.5.3 of AS4970 (2009*) is required if any vehicles or machinery is required to temporarily access a specified fenced protection zone. In such cases, a geotextile membrane must be installed over the specified ground protection area. Coarse-grained wood-chip mulch must be installed to a depth of no less than 70mm and no more than 100 mm over the geotextile membrane. Timber rumble boards or heavy vehicle protection plates/mats must then be installed over the mulch (Figure 22). Ground protection measures must remain in place for the entire duration of required vehicle or machinery access within a fenced protection zone. Protection fencing must be reinstalled to its original shape immediately after the completion of required works within the fenced protection zone.

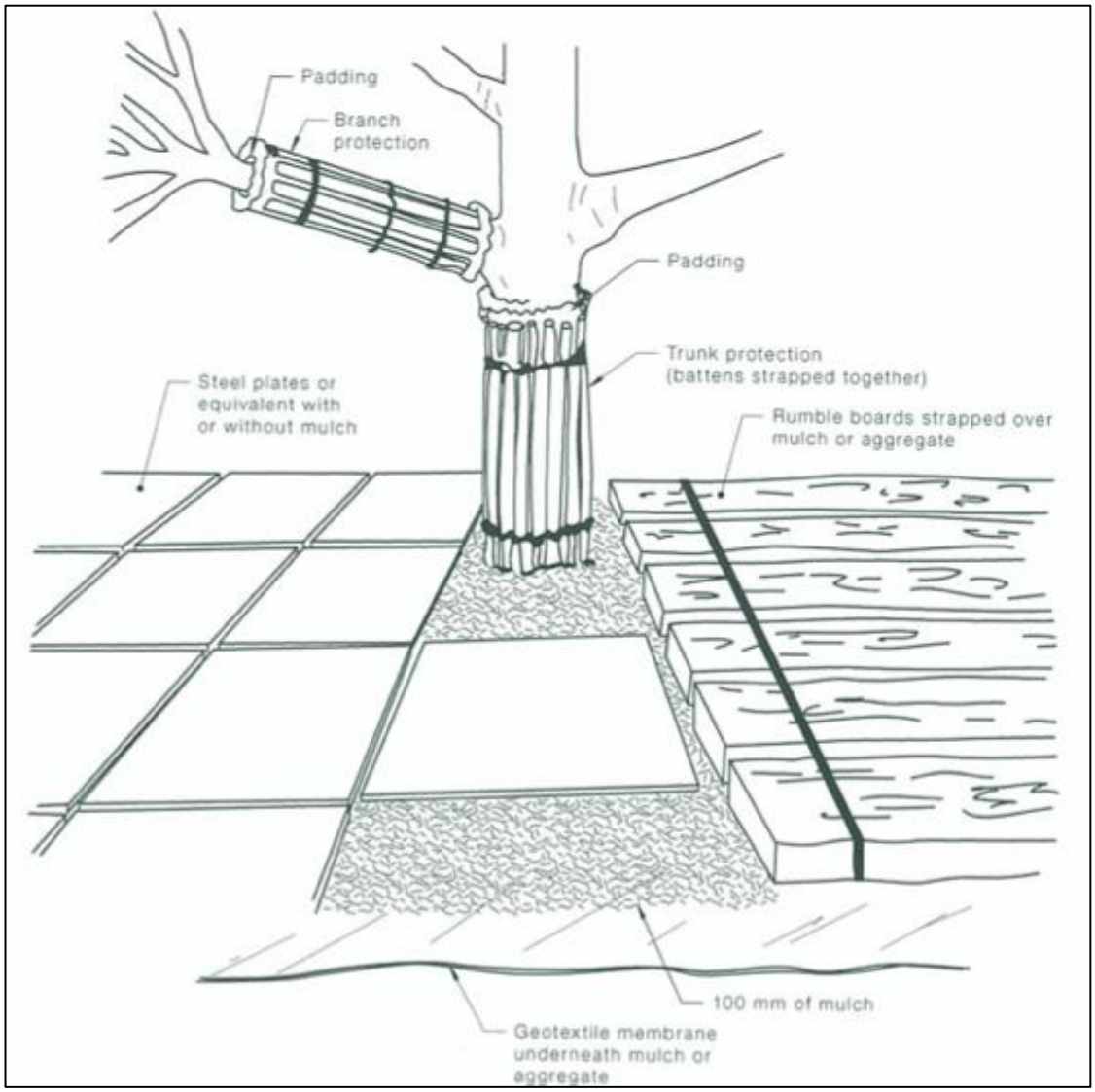

Figure 22. Ground protection measures specified in Section 4.5.3 of *AS4970 (2009)* for temporary access within a fenced protection zone. Steel plates or rumble boards are shown to be suitable for ground protection over mulch and geotextile fabric.

8.3. Site Specific Tree Protection Measures

Forty-three trees are suitable for retention as part of the proposed development (Figure 23) (**Appendix H**). The major TPZ encroachments sustained by Trees 62, 63 and 81 were shown in Section 7 of this report to be acceptable. The major encroachment sustained by Tree 2 and the minor TPZ encroachments sustained by Trees 1, 4, 5, 7, 15, 20, 65, 77, 78, 115 and 178 were determined to be acceptable in Section 7.3 of this report (Table 5). The twenty-eight remaining trees will not be directly impacted under the proposed design plan. The retention of these trees as part of the development is supported providing the following protection measures are in implemented:

8.3.1. Prior to Commencement of Practical Works

- A Project Arborist must be appointed for the duration of this development to ensure compliance with the requirements outlined in Section 8 of this report.
- A fenced protection zones compliant in design with *Section 4.3 of AS4970 (2009)* must be installed around all retained trees.
- Boundary fencing will provide suitable protection for Trees 20, 102, 115, 178, 179, 194, 199, 200, 202 and all unassessed trees positioned outside the subject site during the proposed bulk earthworks required for the road upgrades and drainage installation work (Figure 23).
- Fenced protection zones compliant in design with Section 4.3 of AS4970 (2009) must be installed for the trees surrounding the childcare centre to ensure they are suitably protected during the proposed works.
- A large fenced protection zone must be established on the northern side of the childcare centre to provide suitable protection for Trees 63-79 and 81-84. Individual fenced protection zones must be established for Trees 57, 58, 59, 60 and 62 (Figure 23).
- The fenced protection zone for Tree 62 must be established around the entire perimeter of the grassed area surrounding its stem that is enclosed by the eastern edge of the proposed driveway, the southern edge of the proposed carpark, the northern edge of the proposed pedestrian pathway and the eastern property boundary.
- Fenced protection zones must extend to the R_{TPZ} boundary of the adjacent retained tree where feasible. Fencing must be established no more than 0.3 metres from the nearest edge of proposed bulk earthworks in all other cases.
- Coarse-grained wood chip mulch of uniform particle size must be installed to a depth of 70mm within the fenced protection zones surrounding Trees 58, 59, 60 and 62.

- No mulch installation is required within the large fenced protection zone on the northern side of the proposed construction area or for the trees positioned outside the boundary fencing.

8.3.2. During Construction Works

- No access is permitted within the specified fenced protection zones. Any required access within the fenced protection zone must be approved by the Project Arborist prior to entry.
- Ground protection measures compliant with *Section 4.5.3 of AS4970 (2009)* must be installed prior to any approved access within a fenced protection zone.
- Plant equipment is to be kept away from the crown of each tree. No work is to be conducted within the R_{TPZ} of each tree. Where required, work is to be conducted from outside of the TPZ, by reaching into the fenced protection zones to minimise soil disturbance and compaction and avoid any branch and trunk damage.
- There must be no other access within the specified fenced tree protection zones. The Project Arborist must be notified and must provide certification if any access is required during the construction process.
- If approved by Canterbury Bankstown Council, Roots 1-4 must be located using hand tools only and severed by the Project Arborist using a handsaw in accordance with *AS4373 (2007)* (p. 18).
- Demolition of all portions of the existing driveway that is within the R_{TPZ} of Tree 62 must be undertaken using handheld tools only (jackhammers are acceptable) and under the supervision of the Project Arborist (Figure 23). There must be no excavation below the base depth of the existing asphalt surface.
- Once demolished, the exposed ground surface must be covered with coarse grained wood chip mulch to a depth of 70mm and included in the fenced protection zone around Tree 62.
- There must be no unauthorised excavation within a specified fenced protection area (Figure 23). Any required entry and excavation within a fenced protection zone must be assessed by the Project Arborist and undertaken using sensitive methods including hand excavation, hydrovac or air knife as per *Section 3.3.4 of AS4970 (2009).*
- There must be no unapproved root pruning, damage or disturbance. Any tree roots of 40mm or greater that are encountered must be preserved and inspected by the Project Arborist.
- Documentation of all supervised excavation and any encountered tree roots, and an ongoing monitoring schedule for all affected trees must be provided by the Project Arborist as part of the final arboricultural checklist.
-

- The installation of utilities and services must remain outside the fenced protection zones of the retained trees. The Project Arborist must certify that any required encroachment within a fenced protection for the installation of services will not impact the viability of a protected tree.

8.3.3. Post Construction - Landscaping

- Where required, excavation for planting within a retained Tree's R_{TPZ} is to be undertaken manually, to prevent damage to structural roots. Existing soil grades should be maintained with plant container size restricted to a maximum size of 5 litres. No more than 2 plants per square metre for 5 litre pots and 5 plants per square metre for 150 mm pot size. Remedial pruning to crown of tree/s as required to be conducted per AS4373 (2007), to be determined by the Project Arborist.
- The installation of boundary fencing must be undertaken using hand tools only. Fences must be installed with excavated holes to a maximum depth of 600 mm for posts. Boundary fencing must have the flexibility of design to move a post or pier to be 100 mm clear of any structural root (a root greater than >40 mm diameter) to protect such roots and provide sufficient space for future growth without conflict between the 2 structures. Any posts to be relocated must be approved and certified by a structural engineer or architect.

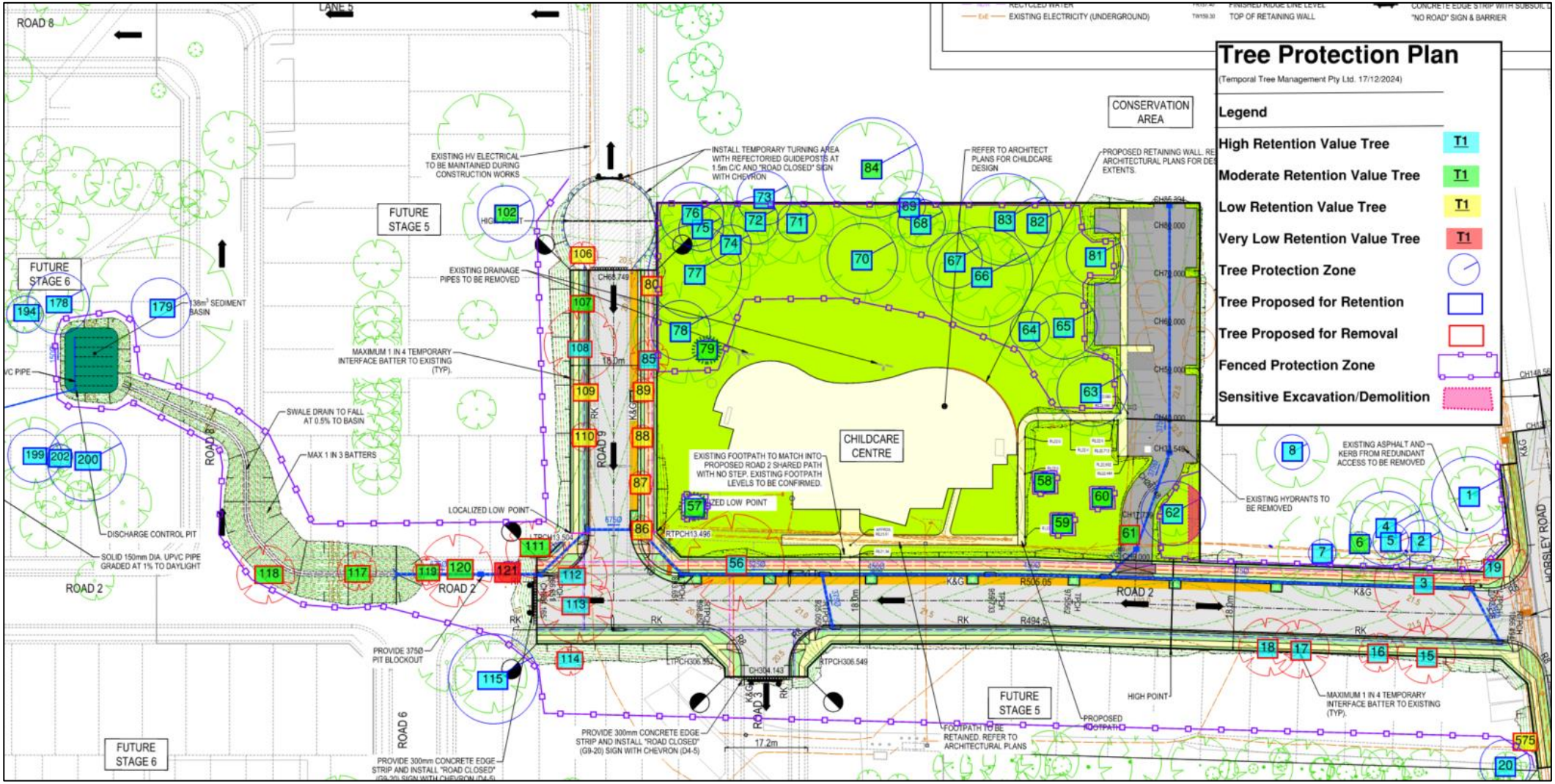

Figure 23. Tree Protection / Removal Plan for the proposed development. *Functional Layout Plan,* prepared *by Beveridge and Williams,* Project No: 2301879, Drawing No: 910, Rev: P4, drawn: 23/09/24. Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

8.4. Certifications

To ensure the proposed development meets the objectives of the Tree Removal/Protection Plan, monitoring and certification process will be undertaken at the following hold points.

· Installation Tree Protection Measures – Inspection and certification by the Project Arborist of fenced protection zones as specified in Section 7.3 of this report. This hold point must be complete prior to the commencement of any tree removal or excavation works.

· Tree Removal – If approved, Inspection and certification by the Project Arborist of the removal of only the twenty-seven trees as specified in Section 8.1 and **Appendix H** of this report. This hold point must be complete prior to the commencement of any excavation works.

· Certification of Required Root Pruning – Certification by the Project Arborist of pruning of Roots 1-4 as identified in Section 7.3 of this report. These four roots must be located using a shovel only and severed by the Project Arborist using a hand saw as specified in *AS4373 (2007) (*p. 18). This hold point must be carried out prior to the commencement of excavation works for the proposed driveway, pedestrian walkway and / or proposed carpark.

· Supervision and Certification of Entry into Fenced Protection Zones – Inspection and certification by the Project Arborist of required ground protection measures prior to approved access within designated fenced protection zones. This hold point must be carried out prior to the commencement practical works required within established fenced protection zones. Any additional entry within a specified fenced protection zone must be certified by the Project Arborist prior to commencement of practical works.

· Monitoring of Retained Trees– Regular inspection and certification by the Project Arborist of tree protection measures and condition of retained trees. Any required maintenance of the tree protection measures or retained trees must be undertaken by the Project Arborist.

· Final Project Arborist Inspection– Final inspection by Project Arborist and certification of compliance with the Tree Protection Plan as specified in Section 8.3 of this report. All specified protection measures outlined in Section 8.3 must remain in place until this final inspection.

References:

Australian Standard AS 4970 (2009) Protection of trees on development sites. Standards Australia.

Australian Standard AS 4373 (2007) Pruning of amenity trees. Standards Australia.

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Matheny, P. N. and Clark, J. R. (1994) A photographic guide to the evaluation of hazard trees in urban areas (2nd Ed). International Society of Arboriculture, Champaign (pp 5, 8, 22 and 32).

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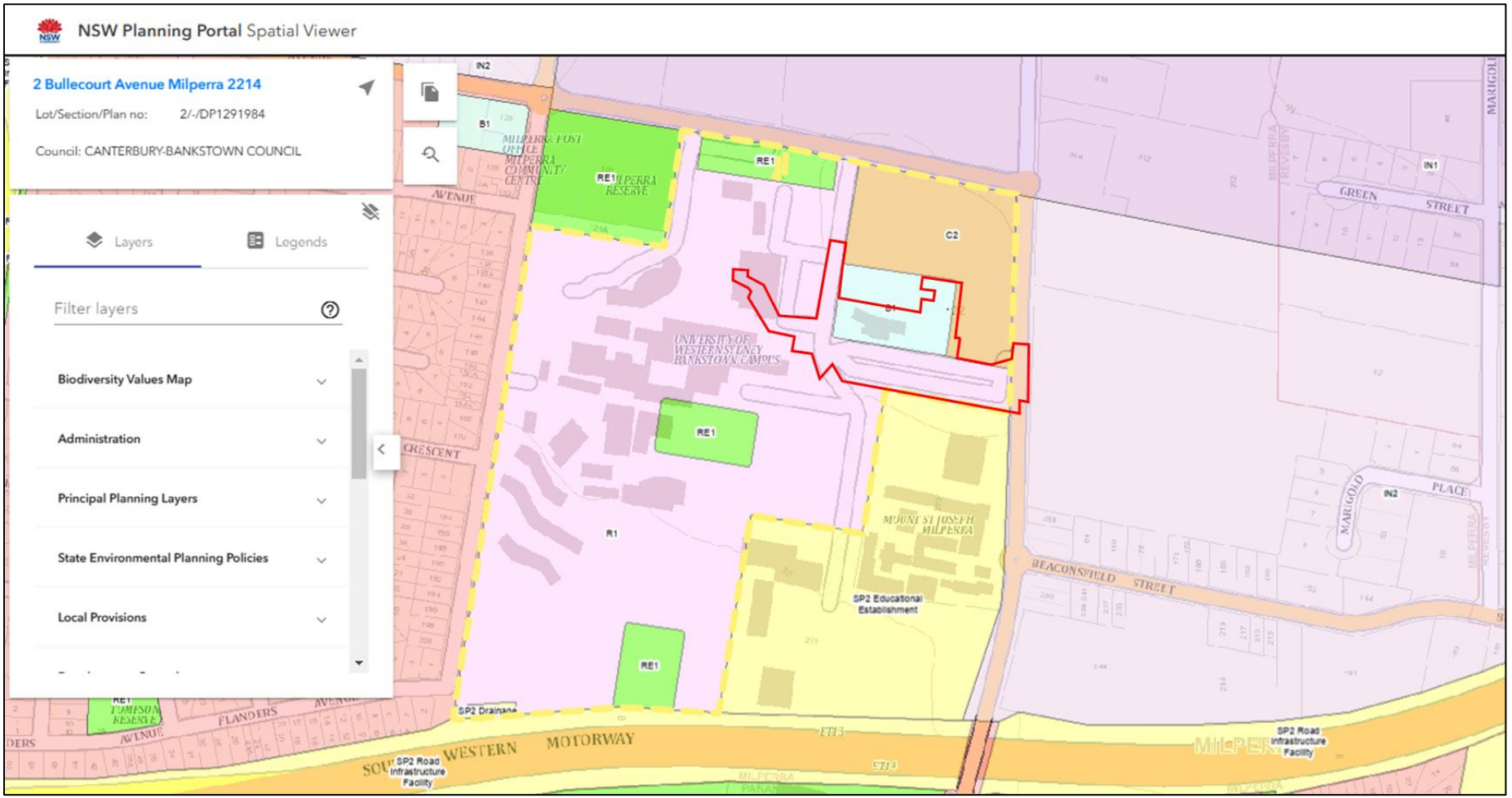
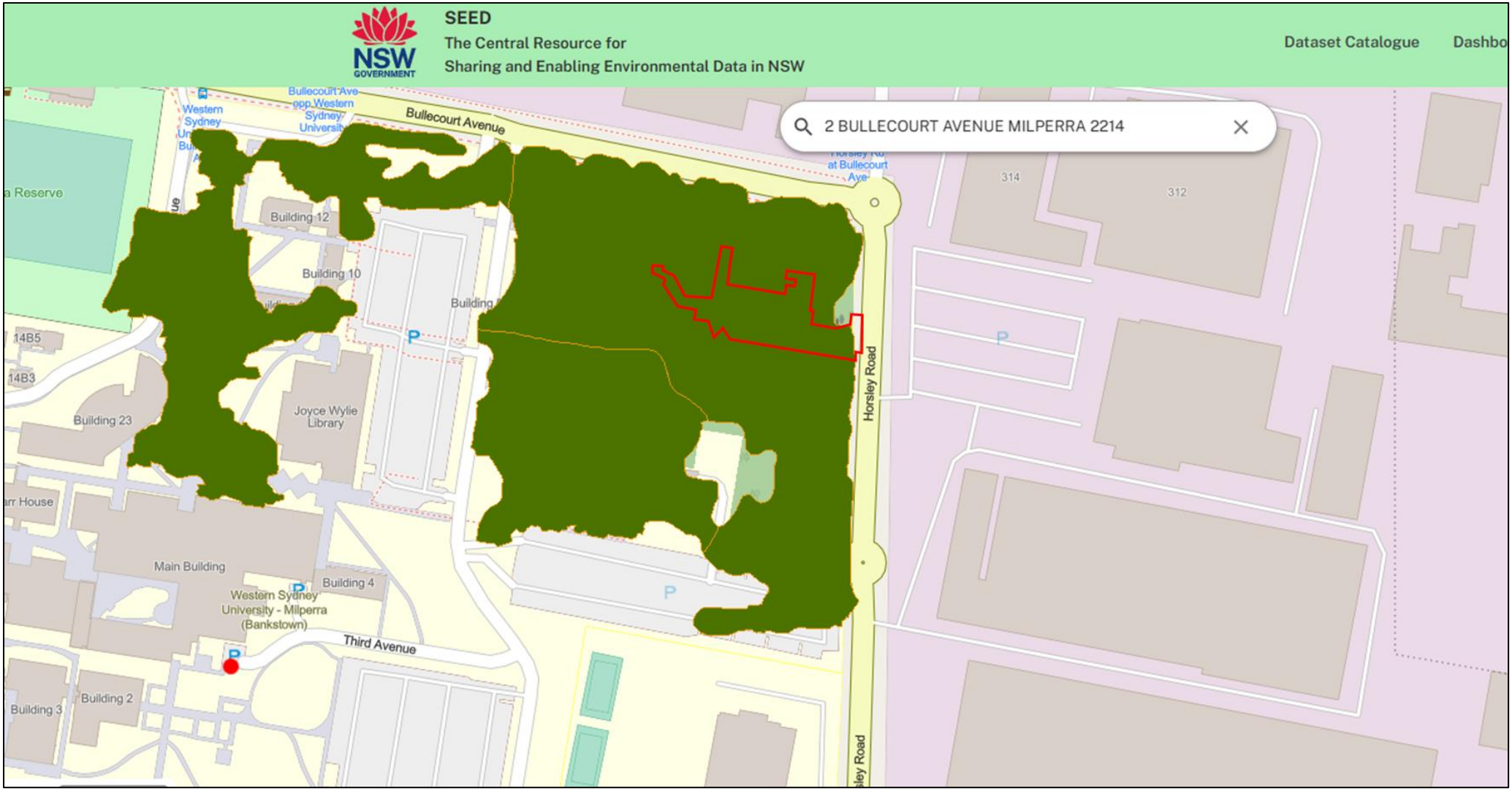
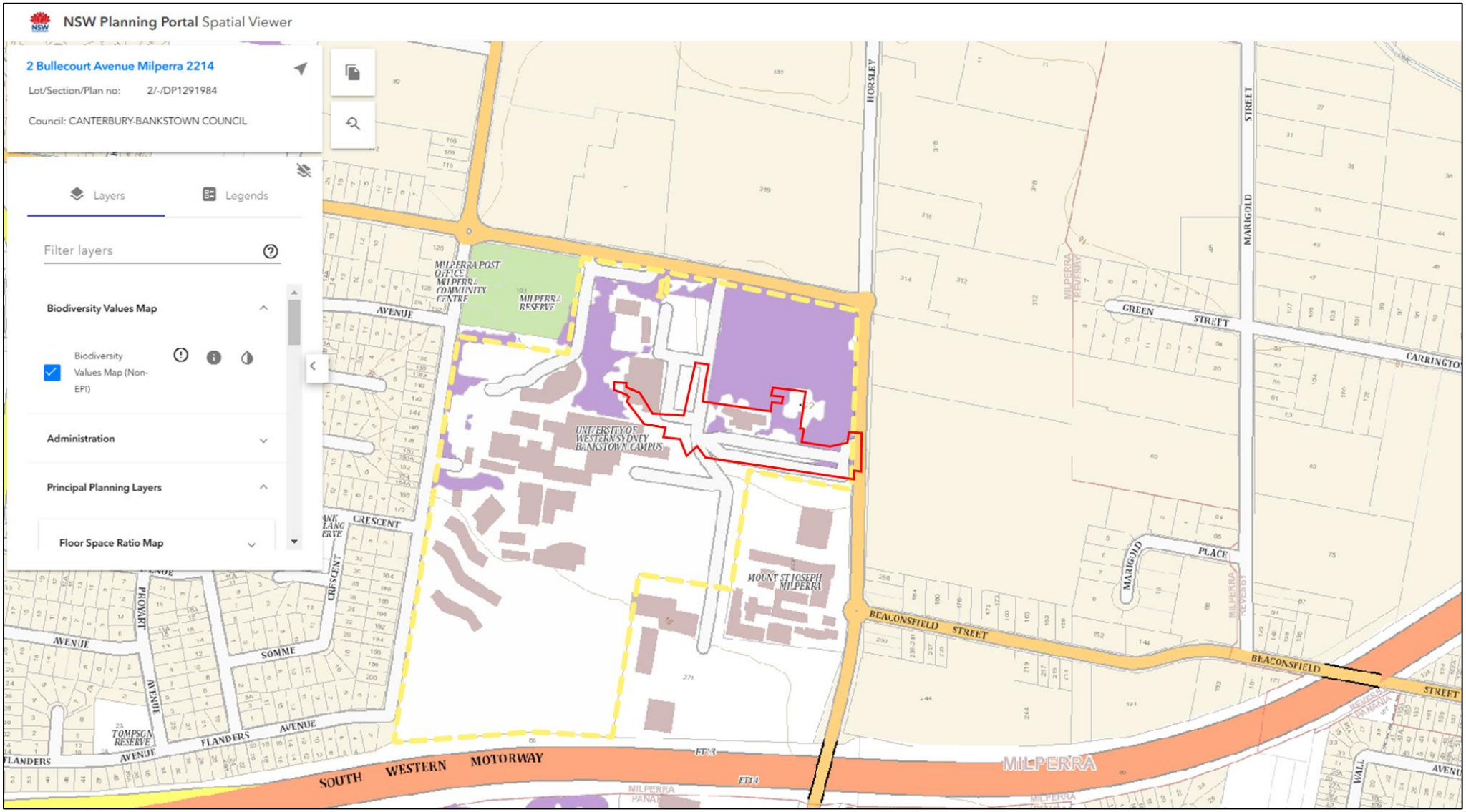
Appendix A: Detailed Tree Location Maps



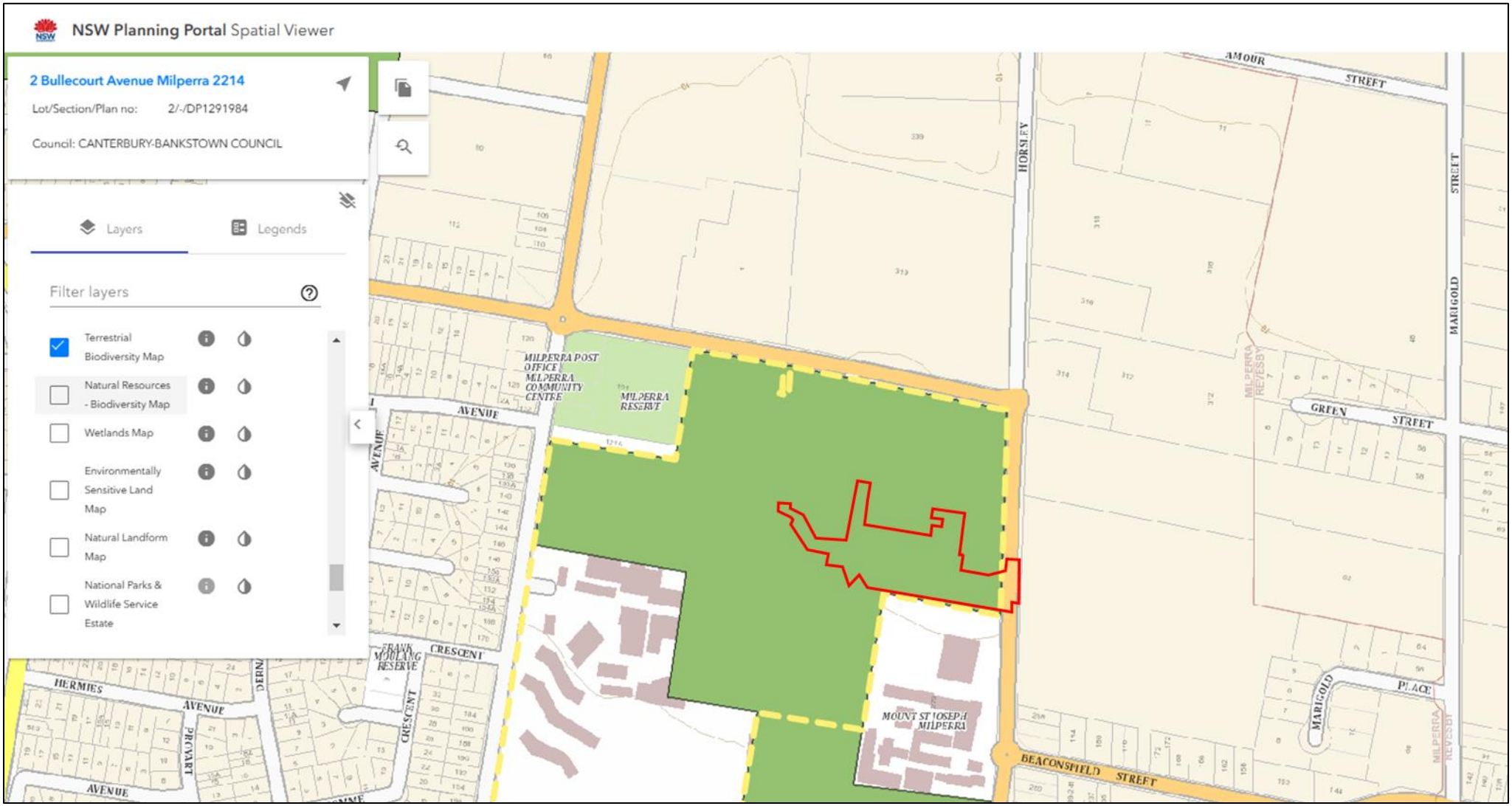
Subject site (RED boundary) positioned within an R1 General Residential (PINK polygon), B1 Neighbourhood Centre (BLUE polygon) and C2 Environmental Conservation zone (ORANGE polygon). Image from Planning NSW (2024).



Subject site (RED boundary) is positioned entirely within a Cumberland Plain Woodland identified EEC (annotated as GREEN polygons). Image from NSW SEED Mapping (2024).



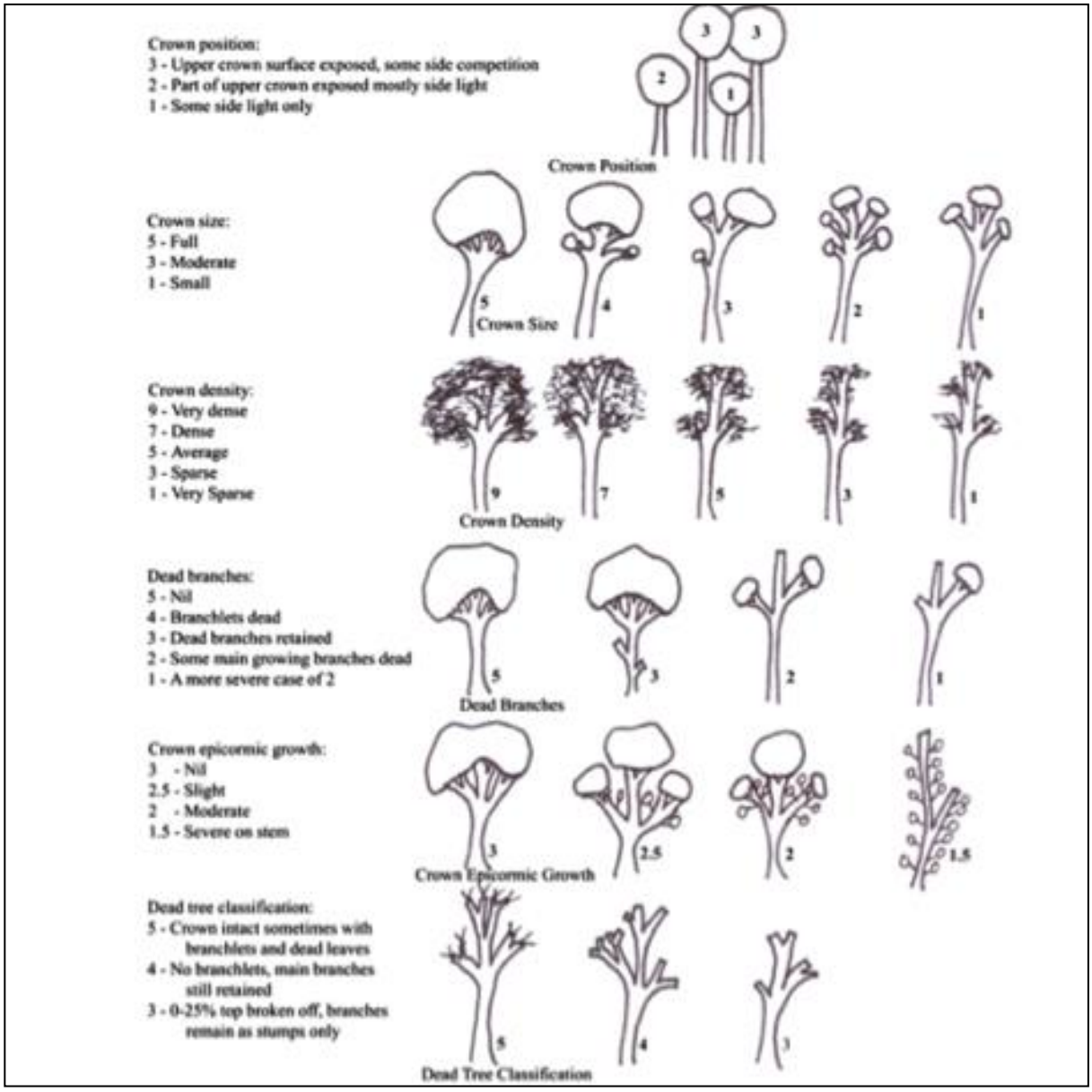
Subject site (RED boundary) is contained Biodiversity Values Mapped area (annotated as a PURPLE polygon). Image from Planning NSW (2024).



Subject site (RED boundary) is not within the Ashford or Bullecourt Avenue Heritage Items (annotated as a BROWN polygon). Image from Planning NSW (2024).

Appendix B: Vitality using Visual Vitality Index (Johnstone et al. 2012).

VVI = 3/3 (Upper crown exposed) + 5/5 (Good crown size) + 8/9 (Good crown density) + 4/5 (Very little deadwood) + 2/3 (Moderate epicormic growth) + 5/5 (Crown in tact).
=26/30.



Appendix C: Tree Retention Values Priority Requirements

From Morton (2011). Accessed via the Leichardt Council Tree Technical Manual.

Retention value	Recommended action
"High"	• These trees are considered worthy of preservation; as such careful consideration should be given to their retention as a priority. • Proposed site design and placement of buildings and infrastructure should consider the Tree Protection Zones as discussed in the following sections to minimise any adverse impact. • In addition to Tree Protection Zones, the extent of the canopy (canopy drip-line) should also be considered, particularly in relation to high rise developments. Significant pruning of the trees to accommodate the building envelope or temporary scaffolding is generally not acceptable.
"Moderate"	• The retention of these trees is desirable. • These trees should be retained as part of any proposed development if possible, however these trees are considered less critical for retention. • If these trees must be removed, replacement planting should be considered in accordance with Council's Tree Replacement Policy to compensate for loss of amenity.
"Low"	• These trees are not considered to worthy of any special measures to ensure their preservation, due to current health, condition or suitability. They do not have any special ecological, heritage or amenity value, or these values are substantially diminished due to their SULE. • These trees should not be considered as a constraint to the future development of the site.
"Very Low"	• These trees are considered potentially hazardous or very poor specimens, or may be environmental or noxious weeds. • The removal of these trees is therefore recommended regardless of the implications of any proposed development.

	Landscape Significance Reading						
Tree Sustainability	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Greater than 40 years	**High Retention Value**						
15 to 40 years			**Moderate**				
5 to 15 years				**Low**			
Less than 5 years					**Very Low Retention Value**		
Dead or hazardous							

Appendix D: Landscape Significance Definitions

From Morton (2011). Accessed via the Leichardt Council Tree Technical Manual.

Rating	Heritage value	Ecological value	Amenity value
1. SIGNIFICANT	The subject site is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance or is listed as a Significant Tree.	The subject tree is scheduled as a Threatened Species as defined under the *Threatened Species Conservation Act 1995 (NSW)* or the *Environmental Protection and Biodiversity Conservation Act 1999.*	The subject tree has a very large live crown size exceeding 100m² with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species.
	The subject tree forms part of the curtilage of a Heritage Item (building /structure /artefact as defined under the LEP) and has important association with that item.	The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species.	The subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity.
	The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event.	The subject tree is a Remnant Tree, being a tree in existence prior to development of the area.	The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance.
2. VERY HIGH	The tree has a strong historical association with a Heritage Item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site.	The tree is a locally-indigenous species, representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site.	The subject tree has a very large live crown size exceeding 60m²; a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area.

Rating	Heritage value	Ecological value	Amenity value
3. HIGH	The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence.	The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link / Wildlife Corridor or has known wildlife habitat value.	The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); the subject tree is visible from the street and/or surrounding properties and makes a positive contribution to the visual character and the amenity of the area.
4. MODERATE	The tree has no known or suspected historical association, but does not detract or diminish the value of the item and is sympathetic to the original era of planting.	The subject tree is a non-local native or exotic species that is protected under the provisions of this Development Control Plan.	The subject tree has a medium live crown size exceeding 25m²; the tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal); and The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area.
5. LOW	The subject tree detracts from heritage values or diminishes the value of a Heritage Item.	The subject tree is scheduled as exempt (not protected) under the provisions of this Development Control Plan due to its species, nuisance or position relative to buildings or other structures.	The subject tree has a small live crown size of less than 25m² and can be replaced within the short term (5-10 years) with new tree planting.
6. VERY LOW	The subject tree is causing damage to a Heritage Item.	The subject tree is listed as an Environment Weed Species in the Leichhardt Local Government Area, being invasive, or is a known nuisance species.	The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% (sparse).

Appendix E: Useful Life Expectancy Definitions

From Barrell (1996). Accessed via the Leichardt Council Tree Technical Manual.

	1. Long	2. Medium	3. Short	4. Removal	5. Moved or replaced
	Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.	Trees that appeared to be retainable at the time of assessment for 15 - 40 years with an acceptable level of risk.	Trees that appeared to be retainable at the time of assessment for 5 - 15 years with an acceptable level of risk.	Trees that should be removed within the next 5 years	Trees which can be reliably moved or replaced.
A	Structurally sound trees located in positions that can accommodate future growth.	Trees that may only live between 15 and 40 years.	Trees that may only live between 5 and 15 more years.	Dead, dying, suppressed or declining trees through disease or inhospitable conditions.	Small trees less than 5m in height.
B	Trees that could be made suitable for retention in the long term by remedial tree care.	Trees that may live for more than 40 years but would be removed for safety or nuisance reasons.	Trees that may live for more than 15 years but would be removed for safety or nuisance reasons.	Dangerous trees through instability or recent loss of adjacent trees.	Young trees less than 15 years old but over 5m in height.
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.	Trees that may live for more than 40 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting.	Trees that may live for more than 15 years but should be removed to prevent interference with more suitable individuals or to provide space for new planting.	Damaged trees through structural defects including cavities, decay, included bark, wounds or poor form.	Trees that have been pruned to artificially control growth.
D		Trees that could be made suitable for retention in the medium term by remedial tree care.	Trees that require substantial remedial tree care and are only suitable for retention in the short term.	Damaged trees that are clearly not safe to retain.	
				Trees that may live for more than 5 years but should be	

Appendix F: Tree Locations and Impact of Development

Functional Layout Plan, prepared *by Beveridge and Williams,* Project No: 2301879, Drawing No: 910, Rev: P4, drawn: 23/09/24. Annotated by Temporal Tree Management Pty Ltd. (17/12/2024).

Appendix G: Key Terms and Definitions

Chlorosis: Yellowing of foliage, typically associated with hydraulic stress or nutrient deficiency.

Dieback: Symptoms of accelerated decline associated with poor tree health. Symptoms include reduced canopy volume, foliar chlorosis and or the development of dead branches within canopy extremities.

Decayed Tissue: Advanced tissue necrosis that has resulted in the degradation of sapwood and / or heartwood tissue. No vascular functionality. Results in reduced wood flexure and compression strength. Can be accelerated by species' susceptibility to decay spread and / or the presence of decay fungi.

Heartwood: Inner wood layer extending to centre of tree. Consists of expired xylem vessels that have lost vascular function. Susceptible to aerobic decay.

Hollowing: Advanced decay leads to complete degradation of affected sapwood and / or heartwood tissue. Results in cavities forming within a tree's stem or branches that can vary in size.

Response Growth: Active growth response by affected tree to wounding or abnormal loading. Increased tissue growth is targeted by tree adjacent to wound to cover / seal exposed sapwood tissue and / or provide increased compression or tension strength.

Tissue Necrosis: Observed in sapwood tissue that has been wounded and exposed. Results in the loss of vascular function and reduced flexure. Xylem vessel elements still observable within the dead sapwood tissue.

Vitality: Observable signs within a tree's canopy density and foliar condition that may indicate its state of health and growth.

Appendix H: Tree Data – See Over

Data collected for seventy trees assessed within and adjacent to the property boundaries of the proposed development of the childcare centre, surrounding internal and external roads and drainage works within the north-eastern boundary of the Western Sydney University Milperra Campus Development site, Milperra. The tree data collection methodology is outlined in Section 4.2 of this report. **Tree proposed for removal are shaded**.

***********************See Over for Tree Data Sheets**************************

Tree	Genus and Species	Common Name	Maturity	No. trees	Height (m)	Width (m)	DBH (cm)	DRF (cm)	Health	Structure	Habitat Observed	ULE	Landscape Significance	Retention Value	R_{TPZ} (m)	R_{SRZ} (m)	Retain / Remove	Protected under DCP	Comments
1	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Mature	1	15	10	67	75	Good	Fair	N/A	Long	Very High	High	8.0	2.9	Retain	Yes	Stem trifurcates at ground level. No signs of union weakness.
2	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	15	6	37	43	Fair	Good	N/A	Long	Very High	High	4.4	2.3	Retain	Yes	Minor dieback. Canopy somewhat thin. Partially suppressed. Hazardous deadwood present.
3	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	15	10	45	51	Good	Good	N/A	Long	Very High	High	5.4	2.5	Remove	Yes	Large tree of indigneous species significance observed to be be in good condition.
4	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	16	14	64	76	Good	Fair	N/A	Long	Very High	High	7.7	2.9	Retain	Yes	Stem bifurcates at 2 and 3 metres height.
5	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Semi mature	1	10	8	31	34	Good	Fair	N/A	Long	Very High	High	3.7	2.1	Retain	Yes	Partially suppressed.
6	*Eucalyptus moluccana*	Grey Box	Semi mature	1	5	4	13	18	Fair	Poor	Hollow	Short	High	Moderate	2.0	1.6	Retain	Yes	Suppressed. Decay and hollowing at base of stem.
7	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Semi mature	1	13	8	24	34	Good	Fair	N/A	Long	Very High	High	2.9	2.1	Retain	Yes	Partially suppressed.
8	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Semi mature	1	15	8	29	33	Good	Good	N/A	Long	Very High	High	3.5	2.1	Retain	Yes	Maturing tree of indigenous species significance observed to be in good condition.
15	*Eucalyptus moluccana*	Grey Box	Mature	1	14	8	53	59	Good	Good	N/A	Medium	Very High	High	6.4	2.7	Retain	Yes	Maturing tree of indigenous species significance in narrow garden within carpark. Root growth has displaced kerb, gutter and asphalt carpark.
16	*Eucalyptus moluccana*	Grey Box	Semi mature	1	11	4	16	21	Good	Good	N/A	Long	Very High	High	2.0	1.7	Remove	Yes	Maturing tree of indigenous species significance in narrow garden within carpark. Root growth has displaced kerb and gutter
17	*Eucalyptus moluccana*	Grey Box	Mature	1	14	8	33	37	Good	Fair	N/A	Medium	Very High	High	4.0	2.2	Remove	Yes	Maturing tree of indigenous species significance in narrow garden within carpark. Root growth has displaced kerb, gutter and asphalt carpark. Stem bifurcates at 2 metres. No signs of Union weakness.
18	*Eucalyptus moluccana*	Grey Box	Mature	1	13	8	39	43	Good	Fair	N/A	Medium	Very High	High	4.7	2.3	Remove	Yes	Maturing tree of indigenous species significance in narrow garden within carpark. Root growth has displaced kerb, gutter and asphalt carpark. Stem bifurcates at 5 metres. Union with signs of bark inclusion.
19	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	18	14	61	72	Good	Fair	N/A	Medium	Very High	High	7.3	2.9	Remove	Yes	Large tree of indigenous species significance in narrow garden within carpark. Root growth has displaced kerb and gutter. Canopy with minor dieback.
20	*Angophora floribunda*	Rough Barked Apple	Mature	1	15	8	44	48	Good	Fair	N/A	Long	High	High	5.3	2.4	Retain	Yes	Large specimen of indigenous species significance in narrow garden on southern side of carpark within southern site boundary. Root growth has displaced kerb and gutter. Existing footpath within TPZ.
56	*Eucalyptus moluccana*	Grey Box	Semi mature	1	19	16	76	88	Good	Good	N/A	Long	Very High	High	9.1	3.1	Remove	Yes	Large tree of indigenous species significance positioned close to edge of existing garden. Root growth has displaced adjacent kerb and gutter.
57	*Eucalyptus moluccana*	Grey Box	Young	1	8	2	7	9	Good	Good	N/A	Long	Moderate	Moderate	2.0	1.2	Retain	Yes	Young tree in good condition.
58	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Young	1	5	1	4	5	Good	Good	N/A	Long	Moderate	Moderate	2.0	0.9	Retain	Yes	Young tree of indigenous species value observed to be in good condition. Reduced landscape significance due to smaller size and increased suitability for replacement.
59	*Eucalyptus fibrosa*	Broad-leaved Red Ironbark	Young	1	5	2	4	5	Good	Good	N/A	Long	Moderate	Moderate	2.0	0.9	Retain	Yes	Young tree of indigenous species value observed to be in good condition. Reduced landscape significance due to smaller size and increased suitability for replacement
60	*Eucalyptus tereticornis*	Forest Red Gum	Young	1	7	2	4	6	Good	Good	N/A	Long	Moderate	Moderate	2.0	1.0	Retain	Yes	Young tree of indigenous species value observed to be in good condition. Reduced landscape significance due to smaller size and increased suitability for replacement
61	*Eucalyptus moluccana*	Grey Box	Young	1	5	2	4	5	Fair	Good	N/A	Medium	Moderate	Moderate	2.0	0.9	Remove	Yes	Young tree of indigenous species value observed to have excessive Sooty Mould within lower canopy. Reduced landscape significance due to smaller size and increased suitability for replacement
62	*Eucalyptus moluccana*	Grey Box	Mature	1	18	10	56	69	Good	Fair	N/A	Long	Very High	High	6.7	2.8	Retain	Yes	Large tree of indigenous species significance observed to show signs of high vitality. Narrow column of tissue necrosis in wound on lower stem on western side. Stem bifurcates at 2 metres, no signs of union weakness.
63	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	17	12	61	82	Good	Good	N/A	Long	Very High	High	7.3	3.0	Retain	Yes	Large tree of indigenous species significance observed to show signs of high vitality. No major defects. Canopy with small amount of hazardous deadwood.
64	*Eucalyptus moluccana*	Grey Box	Mature	1	16	7	34	42	Good	Fair	N/A	Long	Very High	High	4.1	2.3	Retain	Yes	Larger tree of indigenous species significance observed to show signs of high vitality. Partially suppressed. No major defects.
65	*Eucalyptus moluccana*	Grey Box	Mature	1	18	14	57	42	Good	Fair	N/A	Long	Very High	High	6.9	2.3	Retain	Yes	Large tree of indigenous species significance observed to show signs of high vitality. Stem bifurcates at 1.2 metres. No signs of union weakness. Canopy with small amount of hazardous deadwood
66	*Eucalyptus moluccana*	Grey Box	Mature	1	18	14	87	95	Good	Fair	Hollow	Medium	Very High	High	10.5	3.2	Retain	Yes	Large specimen of indigenous species significance. Stem trifurcates at ground level. No signs of union weakness. Hollowing in wound on eastern stem from previous lightning strike.
67	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	18	10	47	66	Good	Fair	N/A	Medium	Very High	High	5.6	2.8	Retain	Yes	Partially suppressed.

Tree	Genus and Species	Common Name	Maturity	No. trees	Height (m)	Width (m)	DBH (cm)	DRF (cm)	Health	Structure	Habitat Observed	ULE	Landscape Significance	Retention Value	R_{TPZ} (m)	R_{SRZ} (m)	Retain / Remove	Protected under DCP	Comments
68	*Eucalyptus moluccana*	Grey Box	Mature	1	15	12	34	42	Good	Fair	N/A	Medium	Very High	High	4.1	2.3	Retain	Yes	Partially suppressed. Tissue necrosis and decay in narrow wound in northern side of lower stem. Good response growth along wound margin.
69	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	13	7	23	27	Fair	Fair	N/A	Medium	Very High	High	2.8	1.9	Retain	Yes	Canopy with minor dieback. Suppressed by adjacent tree.
70	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	19	16	62	79	Fair	Fair	N/A	Medium	Very High	High	7.4	3.0	Retain	Yes	Canopy with minor signs of dieback. Stem bifurcates at 8 metres. Union with signs of bark inclusion.
71	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	16	10	34	46	Good	Good	N/A	Long	Very High	High	4.1	2.4	Retain	Yes	Large tree of native species value observed to be in good condition.
72	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	17	9	40	58	Good	Fair	N/A	Long	Very High	High	4.8	2.6	Retain	Yes	Partially suppressed. Stem with slight northerly orientation.
73	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	15	14	46	50	Good	Fair	N/A	Long	Very High	High	5.5	2.5	Retain	Yes	Suppressed. Stem with northerly orientation and canopy with asymmetric form.
74	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	16	8	36	46	Good	Fair	N/A	Medium	Very High	High	4.3	2.4	Retain	Yes	Stem bifurcates at 7 metres. Union with signs of bark inclusion. Canopy with hazardous deadwood.
75	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	16	8	39	44	Good	Fair	N/A	Medium	Very High	High	4.7	2.3	Retain	Yes	Partially suppressed.
76	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	16	14	54	72	Good	Fair	N/A	Medium	Very High	High	6.5	2.9	Retain	Yes	Partially suppressed. Stem with northerly orientation and canopy with asymmetric form. Stem bifurcates are 8 metres. Union with tissue necrosis in wound from bird damage.
77	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	21	14	81	103	Good	Fair	N/A	Medium	Very High	High	9.7	3.4	Retain	Yes	Large tree of indigenous species significance. Tissue necrosis and decay in small wound in southern side of lower stem. Good response growth around wound. Tissue necrosis in bird damage wounds within codominant canopy unions. Canopy with hazardous deadwood.
78	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	15	12	51	72	Good	Poor	Hollow	Medium	Very High	High	6.1	2.9	Retain	Yes	Partially suppressed. Narrow wound on northern side of stem, possibly from lightning strike. Wound fully occluded. Larger wound on western side of stem at 8 metres with significant decay and hollowing.
79	*Eucalyptus tereticornis*	Forest Red Gum	Young	1	4	2	4	5	Good	Good	N/A	Long	Moderate	Moderate	2.0	0.9	Retain	Yes	Young tree of indigenous species value in good condition.
80	*Pyrus calleryana*	Callery Pear	Semi mature	1	4	3	14	20	Good	Fair	N/A	Long	Low	Low	2.0	1.7	Remove	No	Small tree of reduced species value.
81	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	14	12	49	56	Good	Fair	N/A	Medium	Very High	High	5.9	2.6	Retain	Yes	Large tree of indigenous species significance observed to show signs of high vitality. Stem with easterly orientation and asymmetric canopy structure due to partial suppression. Stem bifurcates at 1.2 metres, no signs of union weakness.
82	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	17	12	43	51	Good	Fair	N/A	Long	Very High	High	5.2	2.5	Retain	Yes	Partially suppressed.
83	*Eucalyptus moluccana*	Grey Box	Mature	1	19	16	81	94	Good	Good	N/A	Long	Very High	High	9.7	3.2	Retain	Yes	Large tree of indigneous species significance observed to be be in good condition.
84	*Eucalyptus tereticornis*	Forest Red Gum	Mature	1	20	16	86	99	Poor	Poor	N/A	Short	Very High	Moderate	10.3	3.3	Retain	Yes	Large tree of indigenous species significance with signs of dieback. Large sounds on lower stem with tissue necrosis and decay. Signs of internal stem decay. Canopy with extensive hazardous deadwood.
85	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	21	13	51	67	Good	Fair	N/A	Long	Very High	High	6.1	2.8	Remove	Yes	Large tree if indigenous species significance in good condition. Wound in upper canopy with signs of tissue necrosis and decay.
86	*Pyrus calleryana*	Callery Pear	Semi mature	1	5	4	14	20	Good	Fair	N/A	Long	Low	Low	2.0	1.7	Remove	Yes	Small tree of reduced species value.
87	*Pyrus calleryana*	Callery Pear	Semi mature	1	5	4	20	24	Good	Fair	N/A	Long	Low	Low	2.4	1.8	Remove	Yes	Small tree of reduced species value.
88	*Pyrus calleryana*	Callery Pear	Semi mature	1	5	4	15	18	Good	Fair	N/A	Long	Low	Low	2.0	1.6	Remove	Yes	Small tree of reduced species value.
89	*Pyrus calleryana*	Callery Pear	Semi mature	1	5	4	15	18	Good	Fair	N/A	Long	Low	Low	2.0	1.6	Remove	Yes	Small tree of reduced species value.
102	*Eucalyptus microcorys*	Tallow Wood	Mature	1	14	14	48	52	Good	Fair	N/A	Medium	High	Moderate	5.8	2.5	Retain	Yes	Larger tree of native species value. Positioned in narrow garden bed within carpark. Root growth has displaced adjacent kerb, gutter and asphalt. Confined root growth area underpinned shortened ULE estimate.
106	*Pyrus calleryana*	Manchurian Pear	Mature	1	5	4	10	13	Good	Fair	N/A	Medium	Low	Low	2.0	1.4	Remove	No	Small tree of reduced species value.
108	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	18	14	52	67	Fair	Poor	N/A	Medium	Very High	High	6.2	2.8	Remove	Yes	Large tree of indigenous species significance positioned within narrow garden bed in carpark. Canopy with minor signs of dieback. Two fungal fruiting bodies on eastern side of lower stem.
109	*Pyrus calleryana*	Manchurian Pear	Mature	1	4	3	10	13	Good	Fair	N/A	Medium	Low	Low	2.0	1.4	Remove	No	Small tree of reduced species value.
110	*Pyrus calleryana*	Manchurian Pear	Mature	1	6	6	15	20	Good	Fair	N/A	Medium	Low	Low	2.0	1.7	Remove	Yes	Small tree of reduced species value.

Tree	Genus and Species	Common Name	Maturity	No. trees	Height (m)	Width (m)	DBH (cm)	DRF (cm)	Health	Structure	Habitat Observed	ULE	Landscape Significance	Retention Value	R_{TPZ} (m)	R_{SRZ} (m)	Retain / Remove	Protected under DCP	Comments
111	*Corymbia citriodora*	Lemon-scented Gum	Mature	1	19	12	36	41	Fair	Fair	N/A	Medium	High	Moderate	4.3	2.3	Remove	Yes	Larger tree of reduced species value. Stem bifurcates at 6 metres metres. No signs of union weakness. Stem positioned 0.5 metres from edge of garden bed within carpark. Confined root growth area underpinned shortened ULE estimate.
112	*Eucalyptus saligna*	Sydney Blue Gum	Mature	1	23	12	75	79	Good	Good	N/A	Long	High	High	9.0	3.0	Remove	Yes	Larger tree of reduced species value observed to be in good condition.
113	*Eucalyptus saligna*	Sydney Blue Gum	Mature	1	21	13	77	84	Good	Fair	N/A	Long	High	High	9.2	3.1	Remove	Yes	Larger tree of reduced species value observed to be in mostly good condition. Partially suppressed
114	*Cedrus deodara*	Deodar Cedar	Mature	1	8	6	27	31	Good	Good	N/A	Long	High	High	3.2	2.0	Remove	Yes	Maturing tree of reduced species significance in suppressed position
115	*Eucalyptus crebra*	Narrow-leaved Red Ironbark	Mature	1	13	12	78	76	Fair	Fair	N/A	Medium	Very High	High	9.4	2.9	Retain	Yes	Larger tree of indigenous species value. Canopy with signs of dieback. Bulging on lower stem.
117	*Eucalyptus scoparia*	Wallangarra Gum	Mature	1	9	6	24	29	Fair	Fair	N/A	Medium	High	Moderate	2.9	2.0	Remove	No	Larger tree of native species value positioned within narrow garden on southern side of carpark. Canopy with minor signs of dieback.
118	*Eucalyptus scoparia*	Wallangarra Gum	Mature	1	11	10	38	49	Fair	Fair	N/A	Medium	High	Moderate	4.6	2.5	Remove	No	Larger tree of native species value positioned within narrow garden on southern side of carpark. Canopy with minor signs of dieback.
119	*Eucalyptus scoparia*	Wallangarra Gum	Mature	1	13	7	38	42	Fair	Fair	N/A	Medium	High	Moderate	4.6	2.3	Remove	No	Maturing tree of native species value. Canopy with signs of dieback.
120	*Eucalyptus scoparia*	Wallangarra Gum	Mature	1	13	9	36	43	Fair	Fair	N/A	Medium	High	Moderate	4.3	2.3	Remove	No	Larger tree of native species value positioned within narrow garden on southern side of carpark.
121	*Eucalyptus scoparia*	Wallangarra Gum	Semi mature	1	9	2	7	9	Dead	Poor	N/A	Dead	Moderate	Very Low	2.0	1.2	Remove	No	Small, suppressed tree. Canopy with signs of dieback.
178	*Eucalyptus saligna*	Sydney Blue Gum	Mature	1	23	14	53	65	Good	Fair	Hollow	Long	High	High	6.4	2.8	Retain	Yes	Large tree of native species value. Tissue necrosis in bird damage wounds within canopy. Early signs of decay and hollowing.
179	*Corymbia maculata*	Spotted Gum	Mature	1	23	12	52	67	Good	Good	N/A	Long	High	High	6.2	2.8	Retain	Yes	Large tree of indigneous species significance observed to be be in good condition.
194	*Corymbia citriodora*	Lemon-scented Gum	Mature	1	18	10	32	37	Good	Good	N/A	Long	High	High	3.8	2.2	Retain	Yes	Partially suppressed.
199	*Corymbia citriodora*	Lemon-scented Gum	Mature	1	15	12	47	59	Good	Good	N/A	Long	High	High	5.6	2.7	Retain	Yes	Large tree of native species value observed to be in good condition.
200	*Eucalyptus sideroxylon*	Red Ironbark	Mature	1	17	14	66	68	Fair	Fair	N/A	Long	High	High	8.0	2.8	Retain	Yes	Minor dieback. Stem bifurcated at 1 metre. No obvious signs of union weakness. Partially suppressed.
202	*Corymbia citriodora*	Lemon-scented Gum	Mature	1	20	8	20	24	Good	Good	N/A	Long	High	High	2.4	1.8	Retain	Yes	Maturing tree in good condition.
575	*Callistemon rugulosus*	Bottlebrush	Mature	3	4	3	5	10	Good	Fair	N/A	Medium	Low	Low	2.0	1.7	Remove	No	GROUP of 3 closely positioned specimens of the same size and species. Small trees of low species significance.