



TREE SURVEY

ARBORICULTURAL CONSULTANTS

ARBORICULTURAL IMPACT ASSESSMENT & TREE PROTECTION PLAN

**East Hills Station Upgrade
Transport Access Program (TAP)**

Version 4

Prepared for:

Cardno

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Document information

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Document status

Document status	Date	Revision description
Version 1	30/08/20	Minor updates following client review
Version 2	26/09/20	Minor updates following TfNSW review
Version 3	09/10/20	Minor updates following TfNSW review
Version 4	14/10/20	Final version

Abbreviations

Abbreviation	Description
AQF	Australian Qualifications Framework
AS	Australian Standards
DBH	Diameter at Breast Height
Id	Identification
m	Metre
mm	Millimetre
NDE	Non-Destructive Excavation
NO	Number
NSW	New South Wales
sp.	Species
SRZ	Structural Root Zone
TPZ	Tree Protection Zone
VTA	Visual Tree Assessment

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1 Background

1.1 Introduction

Tree Survey was commissioned by Cardno to prepare an Arboricultural Impact Assessment (AIA) and Tree Protection Plan (TPP) for the proposed upgrade of East Hills Station. The upgrade is part of the Transport Access Program (TAP). The purpose of this report is to:

- Identify the trees within and adjacent to the proposed disturbance footprint.
- Assess the current health and condition of the subject trees.
- Assess the potential impacts of the development on the subject trees.
- Evaluate the significance of the subject trees and assess their suitability for retention.

1.2 The proposal

The proposal involves an upgrade of East Hills Station as part of the Transport Access Program, which would improve accessibility and amenities for customers. **Figure 1** (below) shows the location of the site.



Figure 1: Site location (East Hills Station)

The Proposal below would include the following key elements:

- Construction of two new lifts to provide access between the existing station underpass and the platforms.

- Upgrade of the station entrance on Park Road including:
 - Floor regrading and modifications to the entrance with readjustments to bollards and bicycle hoops.
 - Upgrade of the existing entry ramp and stairs including upgrade of handrails stair nosings and tactiles to be compliant with Australian standards and guidelines.
- Modifications to the commuter carpark along Park Road to allow for the upgrade of the two accessible parking spaces.
- Provision of a new kiss and ride space along Park Road adjacent to the taxi zone.
- Upgrades of the existing station entrance on Thompson Lane including:
 - Provision of an accessible pathway between the station underpass, Thompson Lane and Maclaurin Avenue by regrading and modifications to the existing path.
 - Provision of a new rest area along the accessible pathway.
- Internal station building works including:
 - Reconfiguration of the existing customer toilet facilities to provide one (1) new unisex Family Accessible Toilet (FAT), one (1) new male ambulant toilet and one (1) new female ambulant toilet.
- Other minor building modifications that may be required to accommodate new or upgraded electrical equipment including a main switchboard, new or upgraded station communications equipment and other station services.
- Ancillary works including adjustments to lighting, relocation or replacement of existing customer facilities (platform seating, bins, payphone, Opal card readers, fencing) and improvement to station systems including additional CCTV cameras, hearing loops and wayfinding signage.

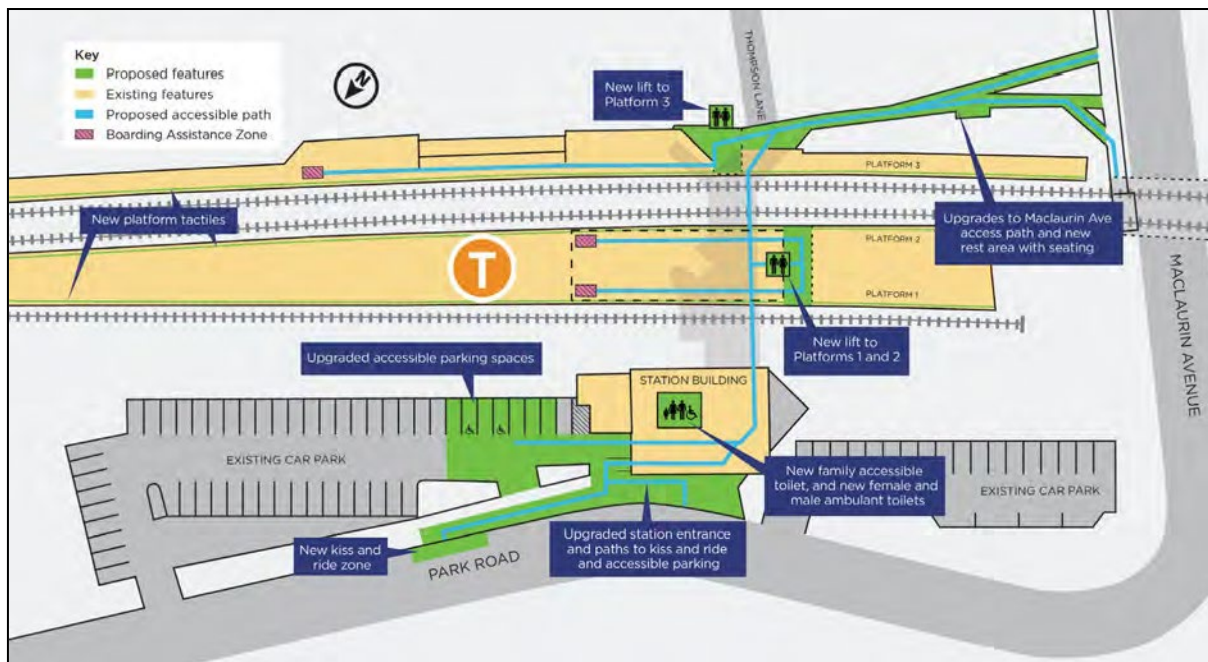


Figure 2: TfNSW schematic diagram

1.3 Documents and plans referenced

The conclusions and recommendations of this report are based on the Australian Standard, AS 4970-2009, Protection of Trees on Development Sites, the findings from the site inspections and analysis of the following documents/plans:

- Architectural Drawings prepared by Aurecon, dated 30/11/18.

1.4 The subject trees

The subject trees were inspected on the 18th of August 2020. A total of **23** trees were assessed and included in this report. The subject trees were assessed in accordance with a visual tree assessment (VTA) as formulated by Mattheck & Breloer (1994)¹, and practices consistent with modern arboriculture. The following limitations apply to this methodology:

- Trees were inspected from ground level, without the use of any invasive or diagnostic tools and testing. Trees within adjacent properties or restricted areas were not subject to a complete visual inspection (i.e. defects and abnormalities may be present but not recorded).
- Diameter at breast height (DBH) has been accurately measured using a diameter tape. Tree height and canopy spread were estimated unless otherwise stated.
- Tree protection zones have been calculated in accordance with Australian Standard, AS 4970-2009, Protection of Trees on Development Sites using the DBH measurements.

A tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Arboriculturalists (IACA) Significance of a Tree, Assessment Rating System (see **Appendix I**). Further information, observations, and measurements specific to each of the subject trees can be found in **Chapter 3**.

¹ VTA is an internationally recognised practice in the visual assessment of trees as formulated by Mattheck & Breloer (1994). Principle explanations and illustrations are contained within the publication, Field Guide for Visual Tree Assessment by Mattheck, C, and Breloer, H. Arboricultural Journal, Vol 18 pp 1-23 (1994).

2 Arboricultural Impact Assessment (AIA)

2.1 Impact assessment

There are two types of zones (as defined by AS 4970-2009) that need to be considered when undertaking an arboricultural impact assessment:

- **Tree protection zone (TPZ):** The TPZ is the optimal combination of crown and root area (as defined by AS 4970-2009) that requires protection during the construction process so that the tree can remain viable. The TPZ is calculated by measuring the diameter at breast height (DBH) and multiplying it by twelve (12). The resulting value is applied as a radial measurement from the centre of the trunk to delineate the TPZ.
- **Structural root zone (SRZ):** The SRZ is the area of the root system used for stability, mechanical support, and anchorage of the tree.

Encroachment within the TPZ is acceptable, providing that the arborist can demonstrate that the tree will remain viable. There are three (3) levels of encroachment (as defined by AS 4970-2009):

No encroachment: No encroachment within the TPZ.

Minor encroachment: The encroachment is less than 10% of the TPZ and outside the SRZ.

Major encroachment: The encroachment is greater than 10% of the TPZ or inside the SRZ.

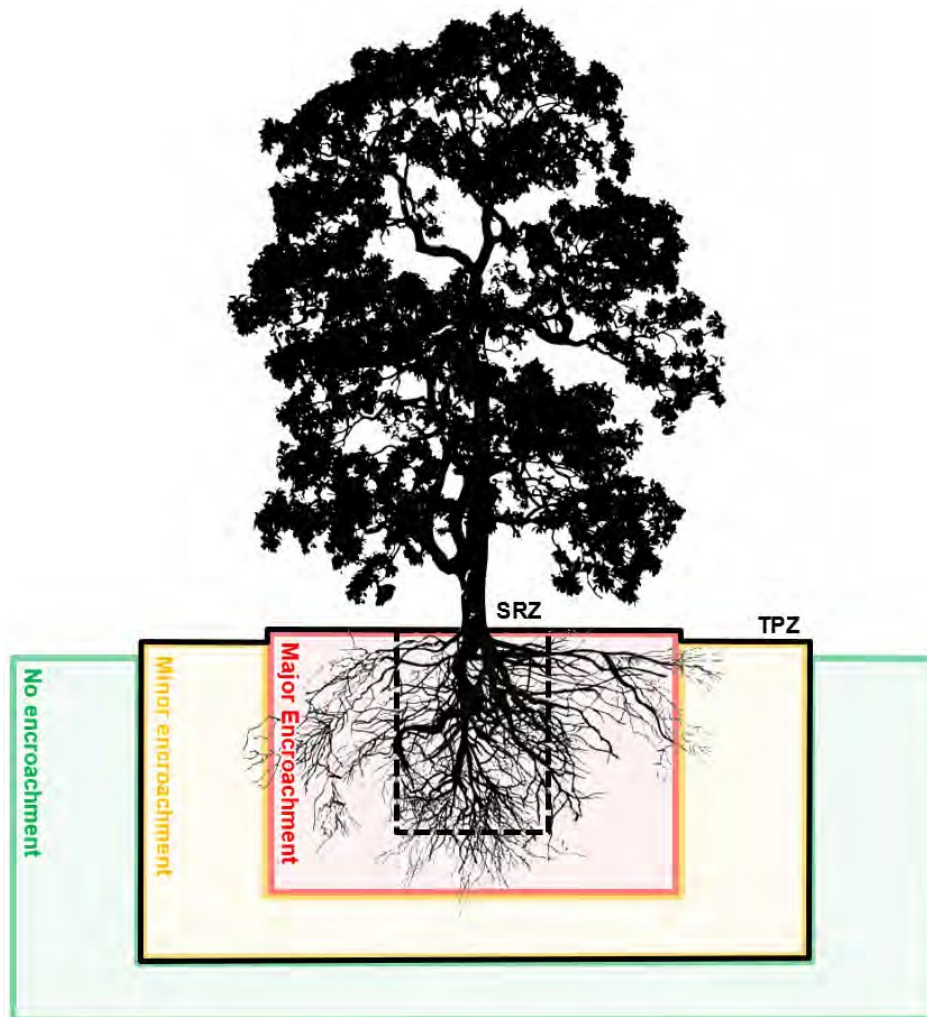


Figure 3: Indicative zones of encroachment within the TPZ

2.2 Mitigating the impacts

Encroachment within the TPZ should be compensated with a range of mitigation measures to ensure that impacts to the subject tree(s) are reduced or restricted wherever possible. Mitigation should be increased relative to the level of encroachment within the TPZ to ensure the subject tree(s) remain viable. The table below outlines requirements under AS 4970-2009, and mitigation measures required within each category of encroachment. These mitigation measures will only apply if trees are proposed to be retained.

Table 1: Mitigation measures

Encroachment	Mitigation Measures
No encroachment	<ul style="list-style-type: none"> N/A
Minor encroachment	<ul style="list-style-type: none"> The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ. Detailed root investigations should not be required. Tree protection must be installed.
Major encroachment	<ul style="list-style-type: none"> The project arborist must demonstrate the tree(s) would remain viable. Root investigation by non-destructive methods may be required for any trees proposed for retention. Consideration of relevant factors, including root location and distribution, tree species, condition, site constraints, and design factors. The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ. The project arborist will be required to supervise any works within the TPZ. Tree protection must be installed.

3 Results

Table 2 shows the results of the arboricultural assessment. Key points are:

3.1 No encroachment

A total of **11** trees will be subject to no encroachment within the TPZ:

- **Retain:** A total of **10** trees (**Tree 1, 2, 6, 7, 8, 9, 17, 18, 19, 20**) are located outside of the proposed construction footprint. No impacts on these trees are foreseeable under the current proposal.
- **Remove:** A total of **1** tree (**Tree 3**) is located outside of the proposed construction footprint. This tree is dead and recommended for removal, regardless of construction impacts.

3.2 Minor encroachment

A total of **2** trees will be subject to a minor encroachment of less than 10% within the TPZ:

- **Retain:** A total of **1** tree (**Tree 5**) is located adjacent to the construction footprint. This tree will be subject to a minor encroachment of less than 10% within the TPZ. The encroachment will not impact upon the SRZ and is unlikely to impact the overall health or condition of the tree. Under the current proposal, this tree can be successfully retained.
- **Remove:** A total of **1** tree (**Tree 4**) will be subject to a minor encroachment of less than 10% within the TPZ. **Tree 4** is in severe decline and recommended for removal, regardless of construction impacts.

3.3 Major encroachment

A total of **10** trees will be subject to a major encroachment of greater than 10% within the TPZ:

- **Retain:** A total of **9** trees (**Tree 11, 12, 13, 14, 15, 16, 21, 22, 23**) will be subject to a major encroachment within the TPZ. The encroachment will be caused by proposed footpath grading or temporary construction activities. These items are considered to be low impact and will have a negligible impact on the subject trees. Several site-specific mitigations for this encroachment have been outlined in Chapter 4. Under the current proposal, these trees can be successfully retained.
- **Remove:** A total of **1** tree (**Tree 10**) is located within the proposed construction footprint and cannot be retained under the current proposal.

3.4 Trees proposed for pruning

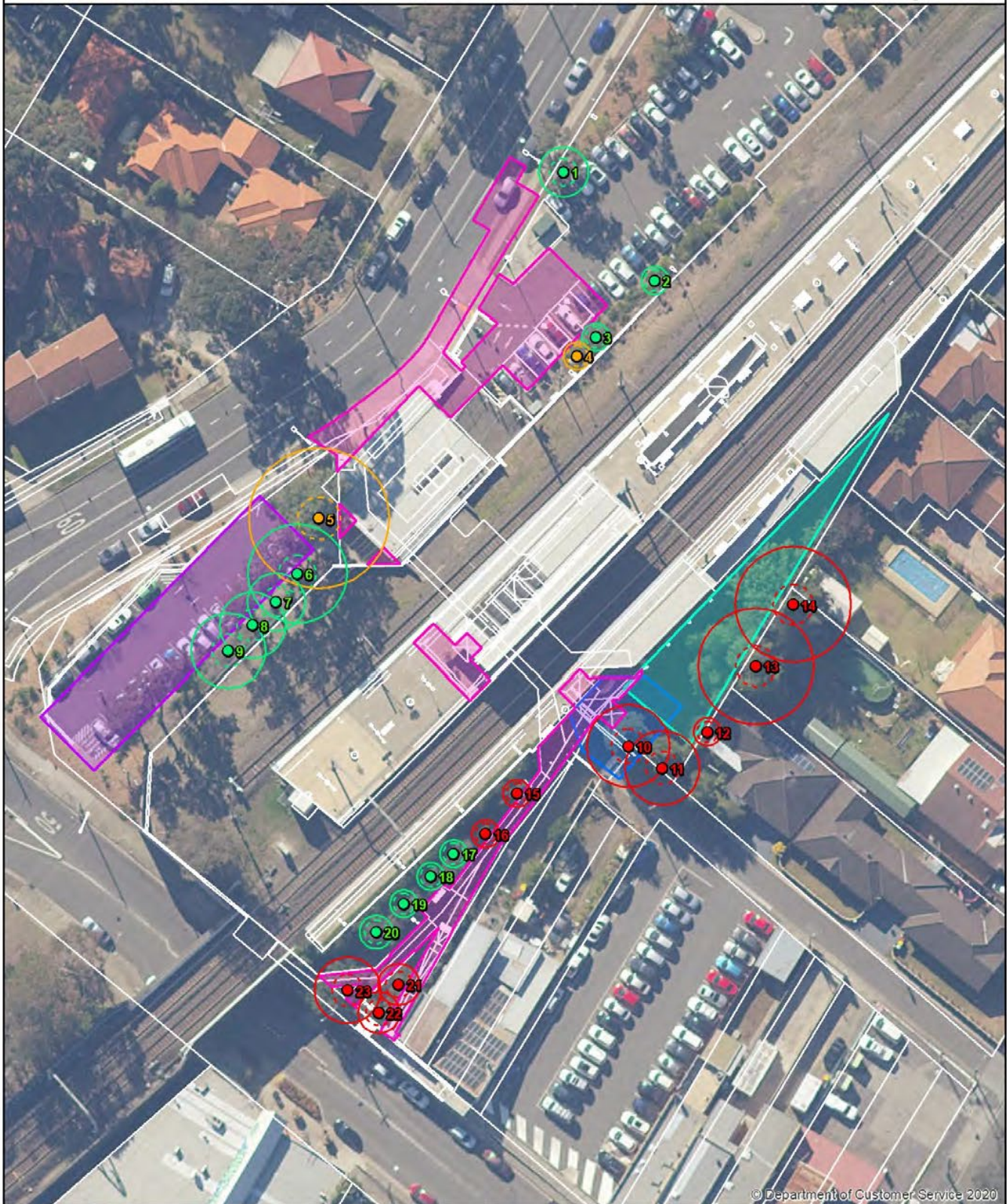
- A total of **4** trees (**Tree 13, 16, 17, 18**) will require pruning to establish construction clearances. The proposed pruning will not exceed 10% of the overall canopy volume and is unlikely to impact the overall health and condition of the trees. The suggested pruning locations are shown in **Appendix I**.

Table 2: Results of the arboricultural assessment

Id.	Botanical name	Height (metres)	Spread (metres diameter)	Health	Structure	Age class	Tree significance	Useful life expectancy	Priority for retention	DBH (millimetres diameter)	TPZ (metres radius)	SRZ (metres radius)	Encroachment	% Encroachment within TPZ	Other notes	Proposal
1	Angophora floribunda	8	8	Good	Good	Semi-mature	Medium	Medium	Medium	300	3.6	2.0	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
2	Acmena smithii var. minor	2	2	Good	Good	Juvenile	Low	Medium	Low	100	2.0	1.5	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
3	Acacia longifolia	3	3	Poor	Poor	Dead	Low	Dead	Low	150	2.0	1.5	No	0%	This tree is dead and therefore recommend for removal.	Remove
4	Ulmus sp.	3	3	Fair	Poor	Semi-mature	Low	Medium	Low	100	2.0	1.5	Minor	2%	This tree is in severe decline and therefore recommended for removal.	Remove
5	Casuarina cunninghamiana	26	18	Good	Good	Mature	High	Medium	High	850	10.2	3.1	Minor	3%	A minor encroachment within the TPZ may be caused by potential grading works. The grading works will be limited to 150mm below grade and have a negligible impact on the subject tree.	Retain
6	Casuarina cunninghamiana	28	8	Good	Good	Mature	Medium	Medium	High	600	7.2	2.7	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
7	Casuarina cunninghamiana	20	8	Fair	Fair	Semi-mature	Low	Medium	Medium	350	4.2	2.1	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
8	Casuarina cunninghamiana	20	8	Fair	Fair	Semi-mature	Low	Medium	Medium	400	4.8	2.3	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
9	Casuarina cunninghamiana	24	8	Good	Fair	Mature	Medium	Medium	Medium	450	5.4	2.4	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
10	Cupressus torulosa	18	10	Good	Good	Mature	Medium	Medium	Medium	500	6.0	2.5	Major	67%	This tree is required to be removed for construction access. It is located within the clearances needed for a large crane to manoeuvre the platform three lift shaft into position.	Remove
11	Cupressus torulosa	18	10	Good	Good	Mature	Medium	Medium	Medium	450	5.4	2.4	Major	11%	This tree is located adjacent to the temporary site compound. Tree protection will need to be installed.	Retain
12	Lagerstroemia indica	3	1	Good	Fair	Juvenile	Low	Medium	Low	150	2.0	1.5	Major	14%	This tree is located adjacent to the temporary site compound. Tree protection will need to be installed.	Retain
13	Schinus areira	12	14	Good	Fair	Mature	Medium	Medium	Medium	700	8.4	2.9	Major	32%	Minor pruning will be required to establish a 3.5m overhead clearance for the installation of temporary site sheds.	Retain
14	Ficus benjamina	12	16	Good	Good	Mature	Medium	Medium	Medium	700	8.4	2.9	Major	32%	This tree is located adjacent to the temporary site compound. Tree protection will need to be installed.	Retain
15	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	150	2.0	1.5	Major	29%	A major encroachment within the TPZ may be caused by potential grading works. The grading works will be limited to 150mm below grade and have a negligible impact on the subject tree.	Retain
16	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	150	2.0	1.5	Major	28%	A major encroachment within the TPZ may be caused by potential grading works. Minor pruning will be required to establish 2.5m overhead clearance for machinery access.	Retain
17	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	150	2.0	1.5	No	0%	This tree is located outside the disturbance footprint. Minor pruning will be required to establish 2.5m overhead clearance for machinery access.	Retain
18	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	150	2.0	1.5	No	0%	This tree is located outside the disturbance footprint. Minor pruning will be required to establish 2.5m overhead clearance for machinery access.	Retain
19	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	150	2.0	1.5	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
20	Callistemon viminalis	5	3	Good	Good	Semi-mature	Low	Medium	Low	200	2.4	1.7	No	0%	This tree is located outside the disturbance footprint. No impacts on this tree are foreseeable under the current proposal.	Retain
21	Callistemon viminalis	6	6	Good	Fair	Mature	Low	Medium	Low	250	3.0	1.9	Major	40%	A major encroachment within the TPZ may be caused by potential grading works. The grading works will be limited to 150mm below grade and have a negligible impact on the subject tree.	Retain
22	Callistemon viminalis	6	6	Good	Fair	Mature	Low	Medium	Low	250	3.0	1.9	Major	19%	A major encroachment within the TPZ may be caused by potential grading works. The grading works will be limited to 150mm below grade and have a negligible impact on the subject tree.	Retain
23	Callistemon viminalis	8	8	Good	Fair	Mature	Medium	Medium	Medium	400	4.8	2.3	Major	29%	A major encroachment within the TPZ may be caused by potential grading works. The grading works will be limited to 150mm below grade and have a negligible impact on the subject tree.	Retain

Arboricultural Impact Assessment

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Legend

The subject trees

- No encroachment
- Minor encroachment
- Major encroachment

Protection zones

- TPZ (continuous line)
- SRZ (dashed line)

Other items

- Existing survey and proposed layout
- Proposed works (permanent impacts)
- Crane area (temporary impacts)
- Site compound (temporary impacts)
- Laydown area (no impacts)



Arboricultural Impact Assessment

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Legend

The subject trees

- No encroachment
- Minor encroachment
- Major encroachment

Protection zones

- TPZ (continuous line)
- SRZ (dashed line)

Other items

- Existing survey and proposed layout
- Proposed works (permanent impacts)
- Crane area (temporary impacts)
- Site compound (temporary impacts)
- Laydown area (no impacts)

0 2 4 6 8 Meters



Arboricultural Impact Assessment

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Legend

The subject trees

- No encroachment
- Minor encroachment
- Major encroachment

Protection zones

- TPZ (continuous line)
- SRZ (dashed line)

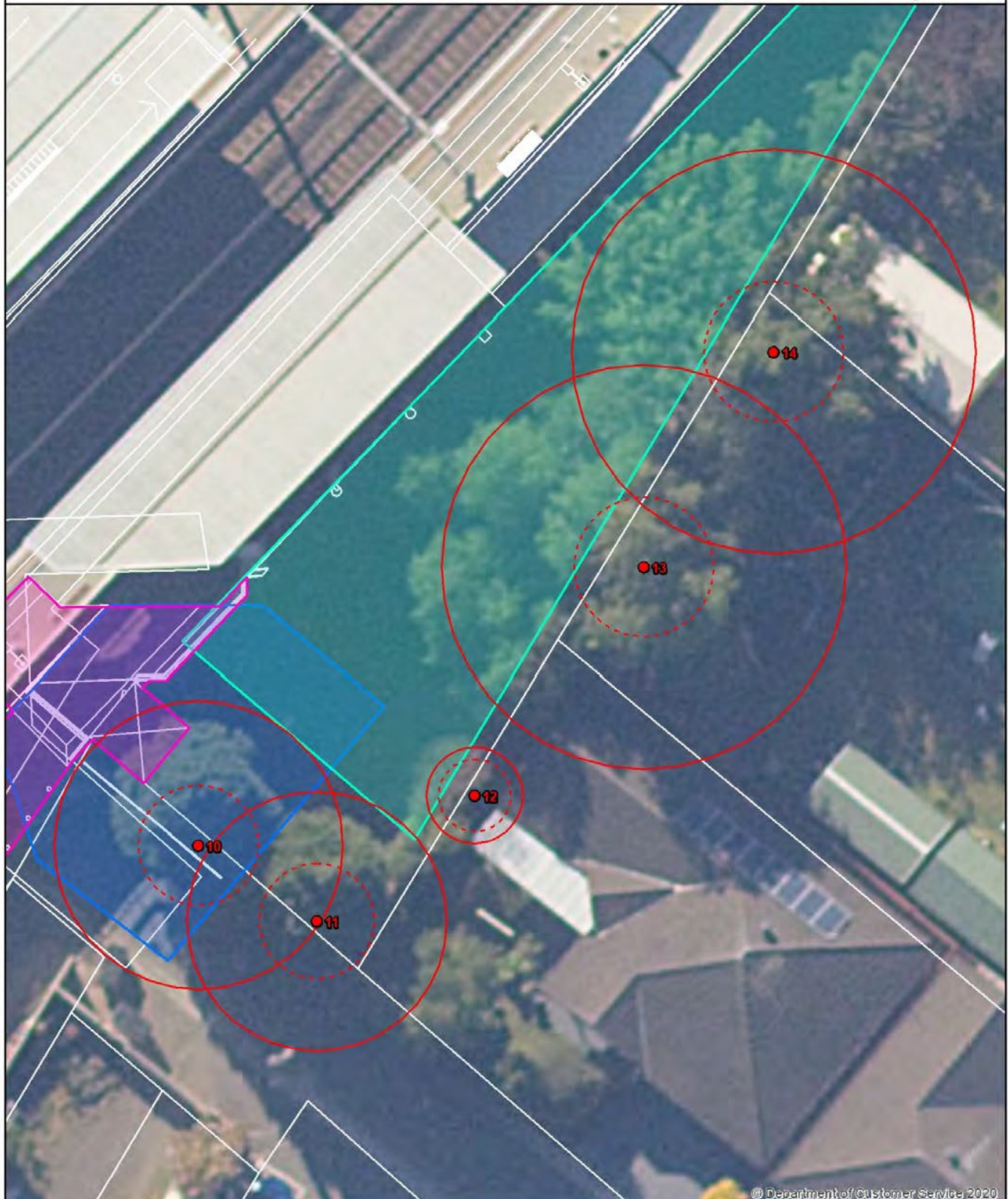
Other items

- Existing survey and proposed layout
- Proposed works (permanent impacts)
- Crane area (temporary impacts)
- Site compound (temporary impacts)
- Laydown area (no impacts)



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Legend

The subject trees

- No encroachment
- Minor encroachment
- Major encroachment

Protection zones

- TPZ (continuous line)
- SRZ (dashed line)

Other items

- Existing survey and proposed layout
- Proposed works (permanent impacts)
- Crane area (temporary impacts)
- Site compound (temporary impacts)
- Laydown area (no impacts)

0 2 4 6 8 Meters



Arboricultural Impact Assessment

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Legend

The subject trees

- No encroachment
- Minor encroachment
- Major encroachment

Protection zones

- TPZ (continuous line)
- SRZ (dashed line)

Other items

- Existing survey and proposed layout
- Proposed works (permanent impacts)
- Crane area (temporary impacts)
- Site compound (temporary impacts)
- Laydown area (no impacts)



4 Tree Protection Plan (TPP)

4.1 Standard tree protection measures

Trees proposed for retention: A total of **20** trees are proposed for retention. The following recommendations apply to these trees:

- **Tree protection fencing:** Tree protection fencing must be established at the locations shown in the tree protection plan. Existing fencing, site hoarding, or structures (such as a wall or building) may be used as tree protection fencing. Specifications for the tree protection fencing are as follows:
 - Temporary mesh panel fencing (minimum height 1.8m) supported by concrete feet.
 - Panels shall be fastened together and supported to prevent sideways movement.
 - Installed prior to site establishment and remain intact until the completion of works.
 - Protective fencing must not be removed or altered without the approval of the project arborist.
 - Prominently signposted with 300mm x 450mm boards stating, "NO ACCESS - TREE PROTECTION ZONE."
 - Certified and inspected by the project arborist.

Where approved works are required within the TPZ, fencing may be setback to provide construction access. Trunk, branch, and ground protection shall be installed and must comply with Australian Standard, AS 4970-2009, Protection of Trees on Development Sites. Any additional construction activities within the TPZ of the subject trees must be assessed and approved by the project arborist. The establishment of tree protection fencing within the TPZ will have a negligible impact on the overall health and condition of the trees.

- **Site inspections:** In accordance with the Australian Standard, AS 4970-2009, Protection of Trees on Development Sites, inspections must be conducted by the project arborist at the following key project stages:
 - **Prior to construction:** Prior to any work commencing on-site (including demolition, earthworks, or site clearing) and following the installation of tree protection.
 - **During construction:** A minimum of one (1) inspection during the construction phase, or as agreed with the project arborist.
 - **After construction:** After all major construction has ceased, following the removal of tree protection.

4.2 Site-specific tree protection measures

The following site-specific tree protection measures must be implemented:

- **Canopy pruning:** **Tree 13, 16, 17, and 18** will require pruning for construction clearances. The pruning is unlikely to impact the overall health and condition of the trees and is considered the preferred option when compared to tree removal. Images showing the suggested pruning locations can be found in **Appendix I**. No habitat was observed within limbs that are required to be pruned.

4.3 Trees proposed for removal

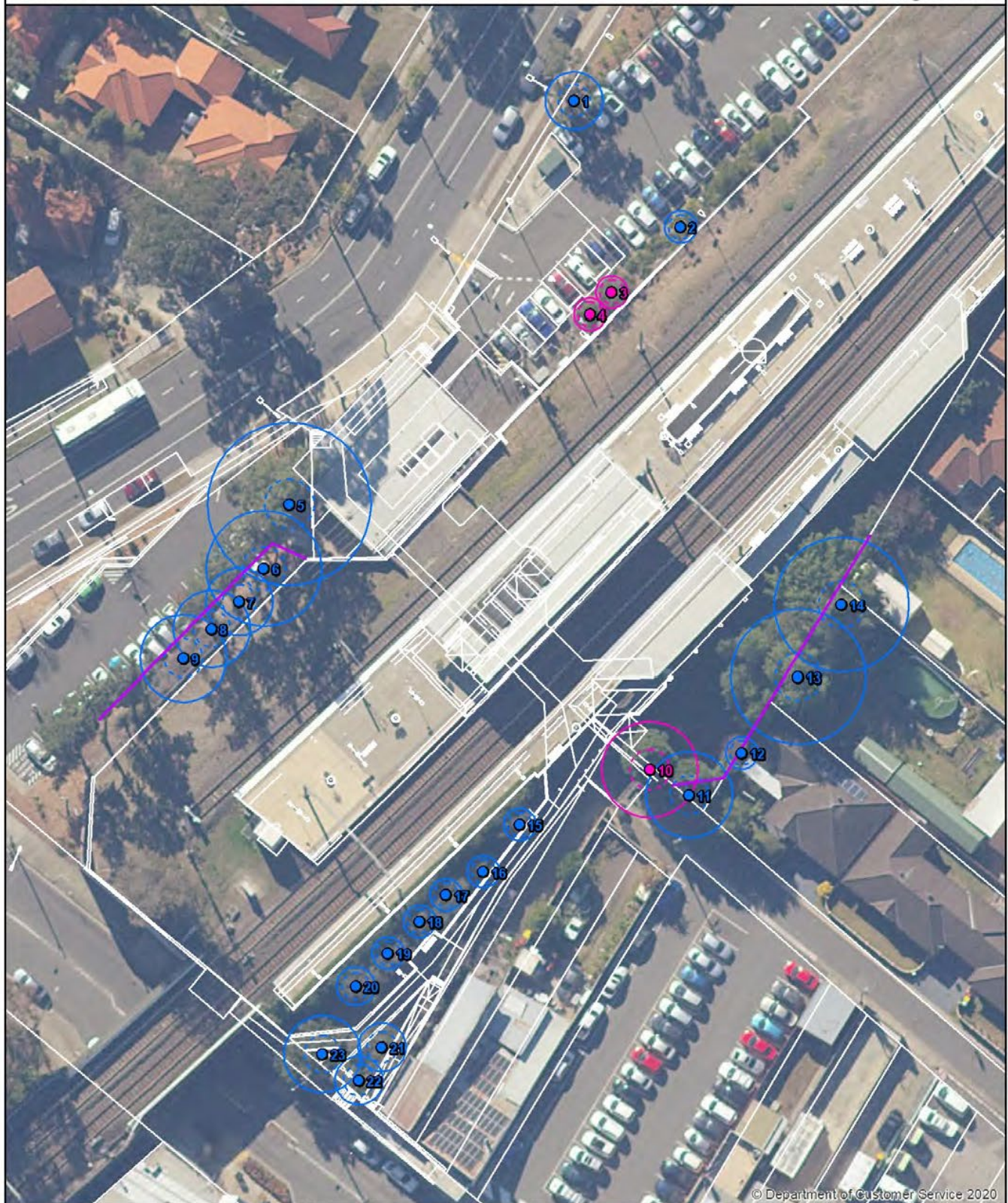
Trees proposed for removal: A total of **3** trees are proposed for removal. One of these trees (**Tree 3**) is dead, the remaining two (2) trees will require offsetting in accordance with Transport for NSW (TfNSW) Vegetation Offset Guide (DMS-SD-087). A total of six (6) replacement trees are required to be planted in accordance with this guideline. Examples of suitable replacement species are listed below:

- *Acmena smithii* (Lillypilly)
- *Angophora hispida* (Dwarf Apple)
- *Banksia integrifolia* (Coastal Banksia)
- *Banksia serrata* (Old Man Banksia)
- *Callicoma serratifolia* (Black Wattle)
- *Callistemon salignus* (Willow Bottlebrush)
- *Ceratopetalum apetalum* (Coachwood)
- *Ceratopetalum gummiferum* (Christmas Bush)
- *Elaeocarpus reticulatus* (Blueberry Ash)
- *Melaleuca linariifolia* (Snow in Summer)
- *Melaleuca stylphelioides* (Prickly-leaved Paperbark)
- *Syzygium paniculatum* (Magenta Cherry)
- *Tristaniaopsis laurina* (Water Gum)

All tree removal work is to be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture, in accordance with Australian Standard AS 4373-2007, Pruning of Amenity Trees, the Work Health and Safety Act 2011, and Work Health and Safety Regulations 2017.

Tree Protection Plan

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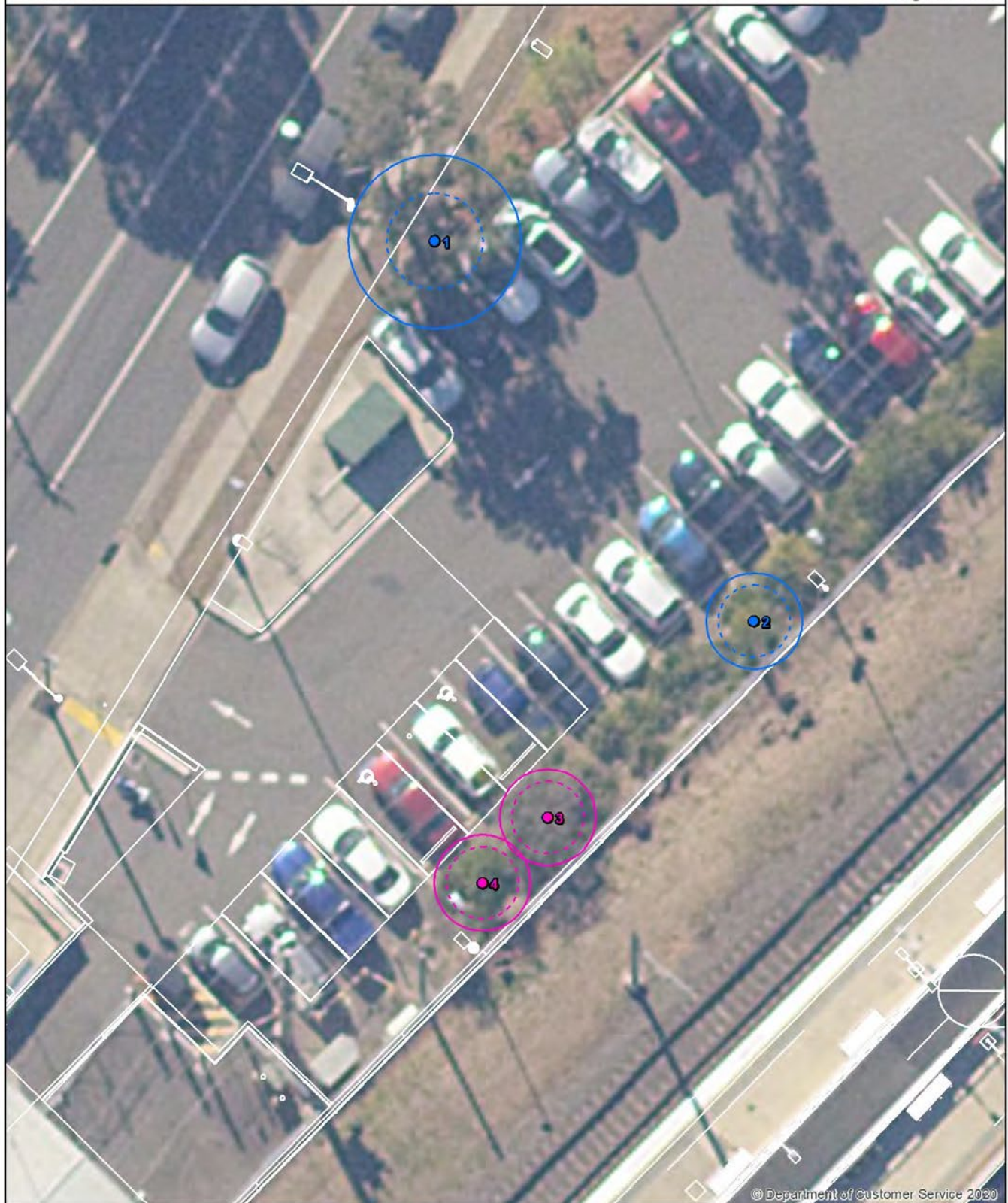
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The subject trees	Protection zones	Tree protection measures
● Retain	TPZ (continuous line)	— Tree protection fence
● Remove	SRZ (dashed line)	



Tree Protection Plan

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Legend

- | | | |
|--------------------------|-------------------------|---------------------------------|
| The subject trees | Protection zones | Tree protection measures |
| ● Retain | ▭ TPZ (continuous line) | — Tree protection fence |
| ● Remove | - - - SRZ (dashed line) | |



Tree Protection Plan

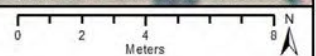
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Legend

The subject trees	Protection zones	Tree protection measures
● Retain	TPZ (continuous line)	Tree protection fence
● Remove	SRZ (dashed line)	







5 References

Australian Standard, AS 4373-2007, Pruning of Amenity Trees.

Australian Standard, AS 4970-2009, Protection of Trees on Development Sites

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

Mattheck, C. (2007). Updated field guide for visual tree assessment. Karlsruhe: Forschungszentrum Karlsruhe.

Mattheck, C., Bethge, K. and Weber, K. (2015). The body language of trees. Karlsruhe: Karlsruher Inst. für Technologie.

Mattheck, C., Lonsdale, D. and Breloer, H. (1994). The body language of trees. London: H.M.S.O.

Transport for NSW (TfNSW) Vegetation Offset Guide (DMS-SD-087).

Appendix I - Pruning specifications

Tree 13



Image 1: Pruning locations (Tree 13)



Image 2: Pruning location (Tree 13)

Legend

- Continuous line: Cutting location
- - - Dashed line: Indicates branch to be removed

Tree 16

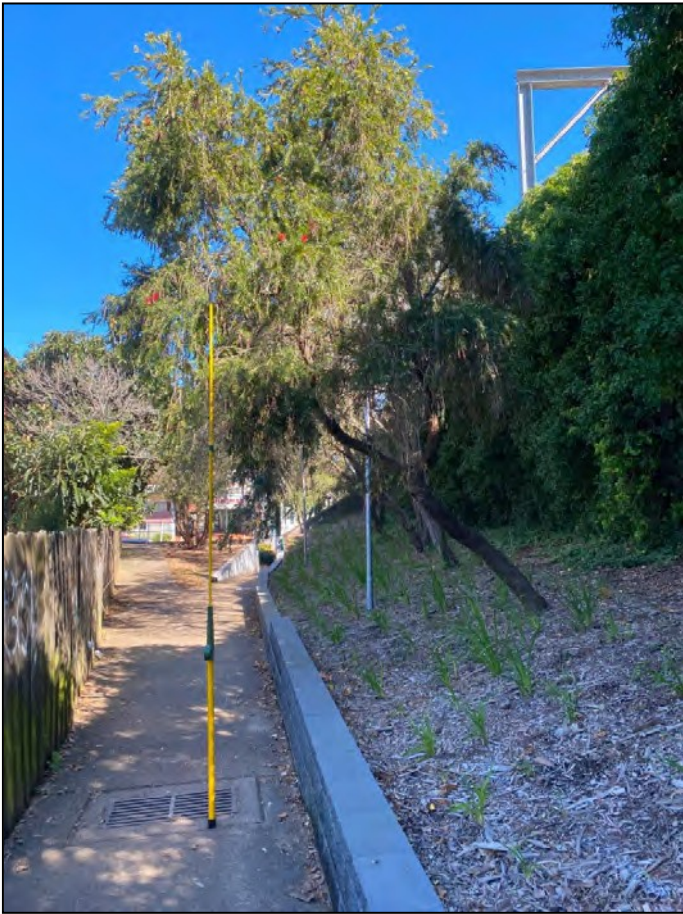


Image 3: The subject tree (Tree 16)



Image 4: Pruning location (Tree 16)

Legend

- Continuous line: Cutting location
- - - Dashed line: Indicates branch to be removed

Tree 17



Image 5: The subject tree (Tree 17)



Image 6: Pruning location (Tree 17)

Legend

- Continuous line: Cutting location
- - - Dashed line: Indicates branch to be removed

Tree 18



Image 7: The subject tree (Tree 18)



Image 8: Pruning location (Tree 18)

Legend

- Continuous line: Cutting location
- Dashed line: Indicates branch to be removed

Appendix II - STARS© assessment matrix

The retention value of a tree or group of trees is determined using a combination of environmental, cultural, physical, and social values.

- **Low:** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
- **Medium:** These trees are moderately important for retention. Their removal should only be considered if adversely affecting the proposed building/works, and all other alternatives have been considered and exhausted.
- **High:** These trees are considered important for retention and should be retained and protected. Design modification or relocation of building/s should be considered to accommodate the setbacks as prescribed by Australian Standard, AS4970-2009 Protection of trees on development sites.

This tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Arboriculturalists (IACA) Significance of a Tree, Assessment Rating System (STARS). The system uses a scale of High, Medium, and Low significance in the landscape. Once the landscape significance of a tree has been defined, the retention value can be determined. Each tree must meet a minimum of three (3) assessment criteria to be classified within a category.

Tree Significance - Assessment Criteria		
Low Significance	Medium Significance	High Significance
<p>The tree is in fair-poor condition and good or low vigour.</p> <p>The tree has form atypical of the species</p> <p>The tree is not visible or is partly visible from the surrounding properties or obstructed by other vegetation or buildings</p> <p>The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area</p> <p>The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen</p> <p>The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions</p> <p>The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms</p> <p>The tree has a wound or defect that has the potential to become structurally unsound.</p>	<p>The tree is in fair to good condition</p> <p>The tree has form typical or atypical of the species</p> <p>The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area</p> <p>The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street</p> <p>The tree provides a fair contribution to the visual character and amenity of the local area</p> <p>The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ</p>	<p>The tree is in good condition and good vigour</p> <p>The tree has a form typical for the species</p> <p>The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age.</p> <p>The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on council's significant tree register</p> <p>The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity.</p> <p>The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group, or has commemorative values.</p> <p>The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ – tree is appropriate to the site conditions.</p>
Environmental Pest / Noxious Weed		
<p>The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties.</p> <p>The tree is a declared noxious weed by legislation</p>		
Hazardous / Irreversible Decline		
<p>The tree is structurally unsound and/or unstable and is considered potentially dangerous.</p> <p>The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.</p>		

Useful Life Expectancy - Assessment Criteria			
Remove	Short	Medium	Long
<p>Trees with a high level of risk that would need removing within the next 5 years.</p> <p>Dead trees.</p> <p>Trees that should be removed within the next 5 years.</p> <p>Dying or suppressed or declining trees through disease or inhospitable conditions.</p> <p>Dangerous trees through instability or recent loss of adjacent trees.</p> <p>Dangerous trees through structural defects, including cavities, decay, included bark, wounds, or poor form.</p> <p>Damaged trees that considered unsafe to retain.</p> <p>Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.</p> <p>Trees that will become dangerous after removal of other trees for the reasons.</p>	<p>Trees that appear to be retainable with an acceptable level of risk for 5-15 years.</p> <p>Trees that may only live between 5 and 15 more years.</p> <p>Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.</p> <p>Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons.</p> <p>Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.</p>	<p>Trees that appear to be retainable with an acceptable level of risk for 15-40 years.</p> <p>Trees that may only live between 15 and 40 more years.</p> <p>Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.</p> <p>Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons.</p> <p>Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.</p>	<p>Trees that appear to be retainable with an acceptable level of risk for more than 40 years.</p> <p>Structurally sound trees located in positions that can accommodate future growth.</p> <p>Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.</p> <p>Trees of special significance for historical, commemorative, or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.</p>

Tree Significance						
Useful Life Expectancy		High Significance	Medium Significance	Low Significance	Environmental Pest / Noxious Weed	Hazardous / Irreversible Decline
	Long >40 years					
	Medium 15-40 years					
	Short <1-15 years					
Dead						

Legend for Matrix Assessment	
	Priority for retention (High): These trees are considered important for retention and should be retained and protected. Design modification or relocation of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.
	Consider for retention (Medium): These trees may be retained and protected. These are considered less critical; however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works, and all other alternatives have been considered and exhausted.
	Consider for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Priority for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

Reference

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS)
 Institute of Australian Consulting Arboriculturists
 Australia, www.iaca.org.au

