Tree Impact Assessment Report – Southwest Metro Early Works

SMCSWSSJ-JHL-WEC-EM-REP-000001

Document and Revision History

Document Details	
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Revisions

Revision	Date	Description	Prepared by	Reviewed by
A	19 April 2019	Internal review	DK	CN
00	30 April 2019	Issued to Sydney Metro and ER for Review	DK	PF
01	20 May 2019	Updated for Sydney Metro and ER comments	DK	CN
02	29 July 2019	Updated for additional trees to be removed as part of embankment stabilisation works	DK	CN
03	18 September 2019	Updated to capture additional trees and provide further clarification on items captured as vegetation	DK	PF
04	25 September 2019	Updated for SM and ER comments	DK	PF
05	6 November 2019	Updated for fence package design changes	DK	PF
06	12 December 2019	Updated for access Gate X tree trimming	DK	PF
07	9 October 2020	Updated for Country-side of Garnet Street trimming	DK	PF
08	16 December 2020	Updated for Sydney Trains service relocation works	DK	PF
09	23 December 2020	Updated for Sydney Metro and ER comments	DK	PF
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Revision	Date	Description	Prepared by	Reviewed by
11	8 February 2021	Updated for works in Zone 11	DK	PF
12	4 March 2021	Updated for Tree 3281	DK	PF
13	7 March 2021	Updated for additional early works and compound set-up	DK	PF
14	16 March 2021	Updated for Sydney Metro and ER comments	DK	PF

Management reviews

Review date	Details	Reviewed by

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1. Introduction

1.1 Purpose

This report has been produced to assess impacts to vegetation and detail the species and number of trees that will be removed as part of the Southwest Metro Early Works (SMEW).

The report has been written in accordance with the requirements of the *Sydney Metro City & Southwest - Sydenham to Bankstown Interim Tree Management Strategy* and *Sydney Metro City & Southwest - Sydenham to Bankstown - Instrument of Approval*, Condition of Approval E5.

1.2 Project Overview and Location

Sydney Metro City & Southwest is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney. The Sydney Metro City & Southwest comprises of two components;

- Chatswood to Sydenham project
- Sydenham to Bankstown upgrade

The Southwest Metro Early Works (SMEW) will include critical enabling work activities for the greater Sydney Metro Sydenham to Bankstown upgrade. The SMEW project site is located on the T3 Bankstown line between Sydenham and Bankstown, NSW.

Works will occur predominately within the rail corridor. SMEW is expected to be finished in 2021.

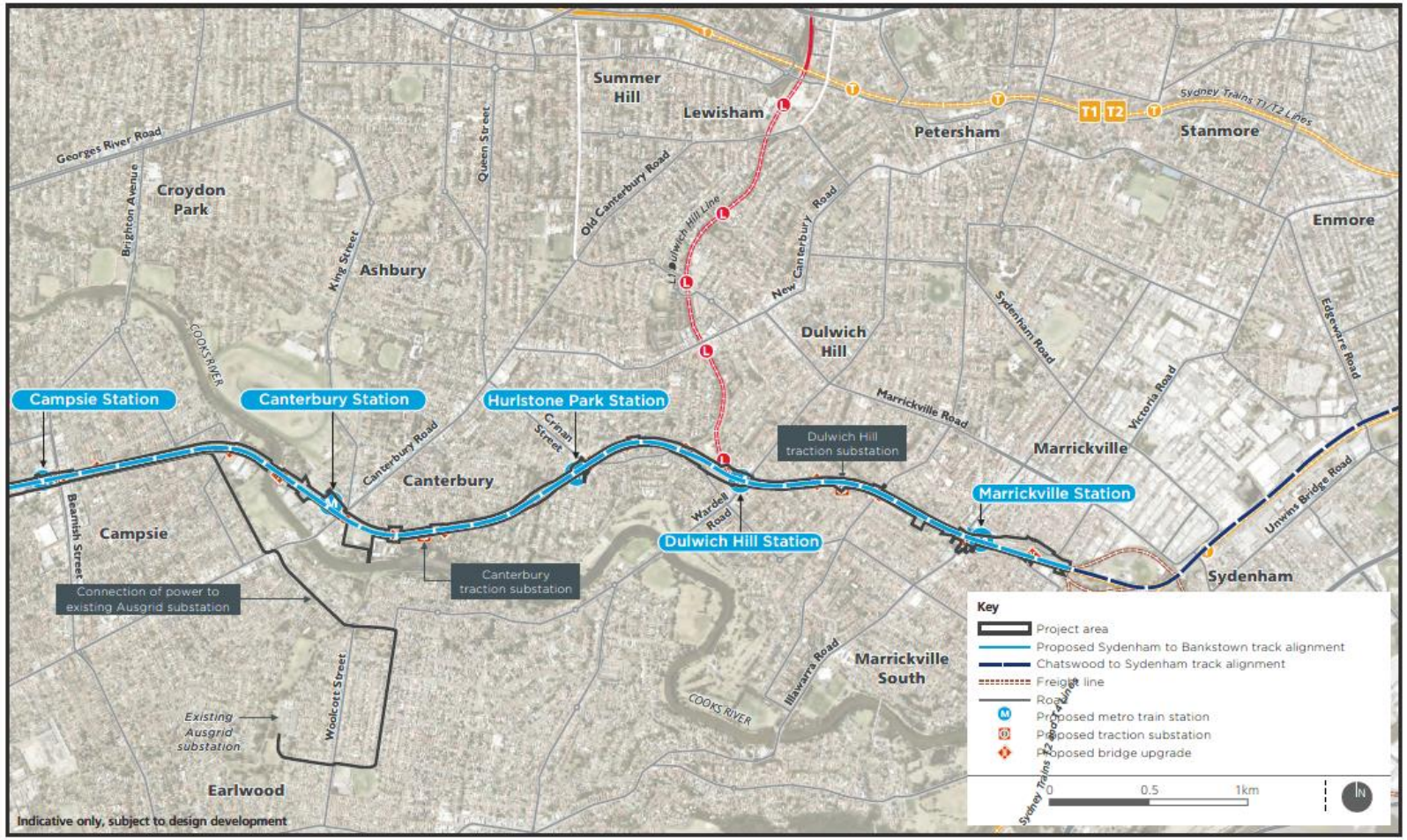
The works will be undertaken by a John Holland Group Pty Limited (John Holland) and Laing O'Rourke Construction Pty Limited (Laing O'Rourke) joint venture referred to as JHLOR.

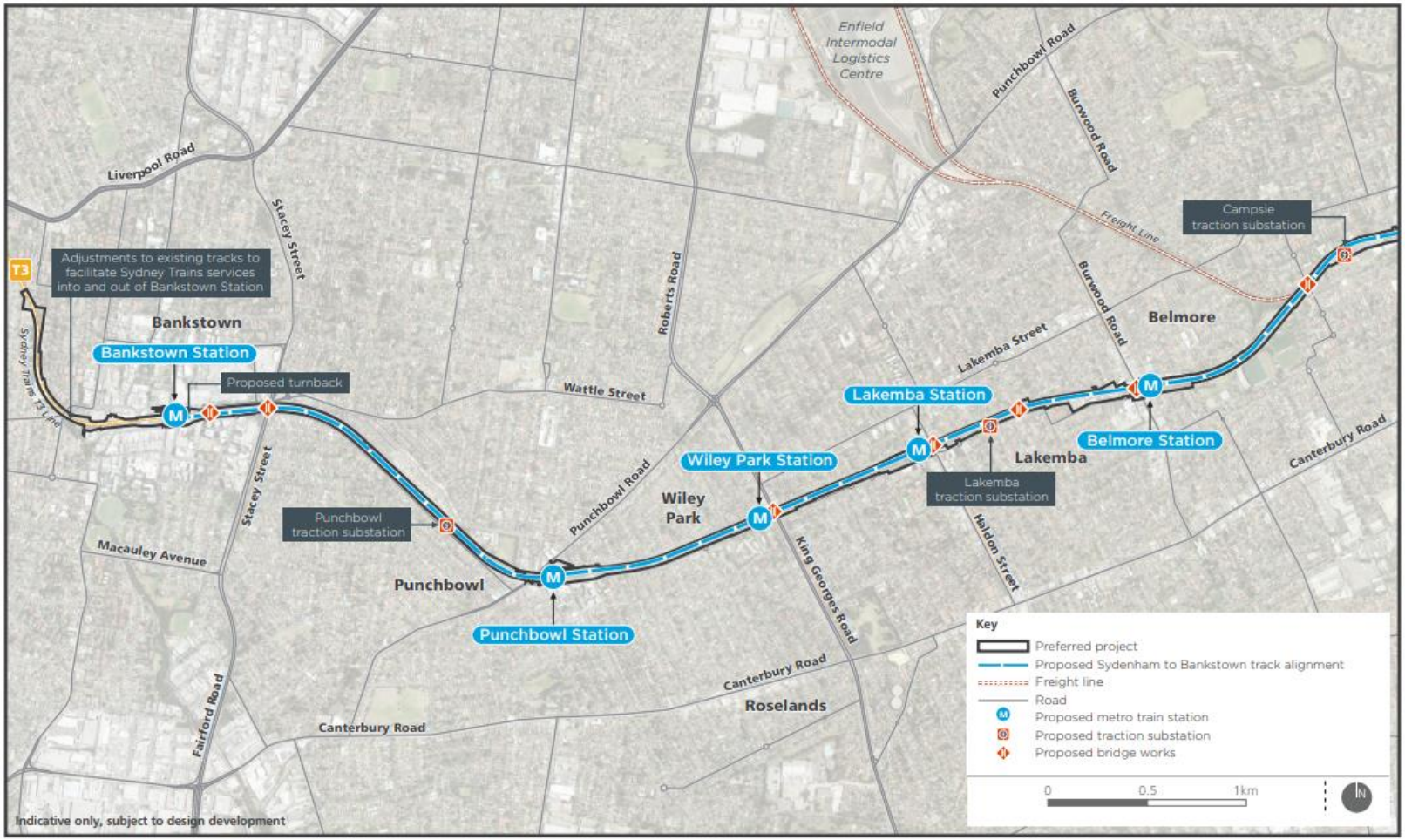
The works include all permanent new infrastructure and modifications to existing infrastructure, which must be constructed to enable the construction of SMEW. The permanent new infrastructure and modifications to existing infrastructure to be constructed includes;

- Installation and commissioning of Combined Service Route (GST, GLT, ULXs)
- Sydney Trains signalling, communications and HV diversions, including the relocation of some services
- Rail embankment stabilisation including retaining walls
- Installation of drainage and fencing
- Civil enabling works for a traction substation
- Vegetation clearing
- Access Road upgrades
- Bridge Remedial works

The SMEW site is shown in Figure 1.

Figure 1 Site Layout




Enfield Intermodal Logistics Centre
Punchbowl Road
Burwood Road
Liverpool Road
Stacey Street
Roberts Road
Freight Line
Campsie traction substation
T3
Adjustments to existing tracks to facilitate Sydney Trains services into and out of Bankstown Station
Bankstown
Bankstown Station
Sydney Trains T3 Line
Proposed turnback
Wattle Street
Lakemba Street
Belmore
Lakemba Station
Belmore Station
Wiley Park Station
Lakemba
Lakemba traction substation
Canterbury Road
Punchbowl traction substation
Wiley Park
Haldon Street
King Georges Road
Macauley Avenue
Punchbowl
Punchbowl Station
Fairford Road
Canterbury Road
Roselands
Key
Preferred project
Proposed Sydenham to Bankstown track alignment
Freight line
Road
Proposed metro train station
Proposed traction substation
Proposed bridge works
0
0.5
1km
N
Indicative only, subject to design development

1.3 Background

In accordance with the *Sydney Metro City & Southwest Sydenham to Bankstown Instrument of Approval* a tree is defined as "*Long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks*".

Condition of Approval E5 states "*The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any trees as detailed in the documents listed in Condition A1. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the CSSI on trees and vegetation within and adjacent to the Construction footprint. The report(s) must include:*

a) a description of the conditions of the tree(s) and its amenity and visual value;
b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and
c) measures to avoid the removal of trees or minimise damage to existing trees and ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities.

A copy of the report(s) must be submitted to the Planning Secretary before the removal or pruning of any trees, including those affected by site establishment Work. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Planning Secretary."

The ecological potential of the project site has been assessed under the Sydney Metro City & Southwest Chatswood to Sydenham Environmental Impact Statement (EIS). Section 22.2 of the EIS states "*The majority of the study area has been heavily modified by past and ongoing disturbances associated with urban development and the active rail corridor. Urban development, clearance, and ongoing maintenance of the rail corridor has resulted in fragmentation, a high level of disturbance, and degradation of vegetation communities.*

The majority of vegetation in the project area and surrounding study area comprises exotic or planted native species on highly modified landforms. There are small isolated patches of remnant or regrowth native vegetation in small portions of the study area associated with rail cuttings with less disturbed soil profiles.

Native vegetation and habitat within the project area is in medium to poor condition, and features impacts from existing maintenance activities, edge effects, weed infestation, and exotic pests."

The EIS also states "*There is relatively low native species richness within the study area, which confirms that the native vegetation has been extensively modified and is in moderate to poor condition.*

A total of 129 flora species from 40 families were recorded within the study area, comprising 63 native and 66 exotic species. Poaceae (grasses, 22 species, 11 native), Myrtaceae (flowering shrubs and trees, 20 species, 13 native), Fabaceae (23 species, 17 native), and Asteraceae (flowering herbs, 11 species, 2 native) were the most diverse families recorded. One threatened flora species (Downy Wattle) was recorded in the study area, outside the project area."

In regards to plant communities Section 22.2 of the EIS states "*two of the native plant communities identified conform to the following threatened ecological communities listed under the TSC Act:*

- *Sydney Turpentine Ironbark Forest in the Sydney Basin Bioregion (Sydney Turpentine Ironbark Forest)*

- *Shale Gravel Transition Forest in the Sydney Basin Bioregion (Shale Gravel Transition Forest).*

No threatened ecological communities listed under the EPBC Act are located in the study area."

It is noted that one threatened plant species was recorded in the vicinity of the EIS study area, however the species does not reside within the Project area. Downy Wattle (Acacia pubescens) was recorded near Punchbowl Station. The Downy Wattle will not be removed as part of these works and will be protected. The EIS states "*No listed threatened flora species were recorded in the project area. One threatened plant species Downy Wattle (Acacia pubescens) listed as vulnerable under the EPBC Act and TSC Act, was recorded in the study area. Around 650 stems are located near the project area as shown in Figure 22.1.*

The patches of stems recorded are located mainly in the vicinity of Punchbowl Station, with around two stems recorded in the rail corridor, and one stem in a Council reserve around 100 metres east of the Yagoona substation. The project has been designed to avoid impacting on the recorded locations of this species."

The *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Submissions and Preferred Project Report* (SPIR) states "*It is expected that large areas of the planted native vegetation and exotic scrub and forest would not require removal for the corridor works, however this is subject to the detailed design of the proposed works, including fencing and the communications services route.*

This vegetation would potentially include trees that provide screening along the corridor for surrounding properties. The need to clear vegetation would be reviewed by the construction contractor/s and minimised wherever practicable."

The SPIR also states "*about 16.3 hectares of vegetation (not including vegetation classed as exotic grassland) may need to be removed, including*:

- *up to 7.3 hectares of planted native vegetation*
- *up to nine hectares of exotic scrub and forest*."

The SPIR does not specify where these areas of clearing are located as this was to be developed as part of detailed design. Furthermore, these areas represent the clearing to occur for corridor works from Sydenham to Bankstown under all work packages (refer to the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Staging Report* for more information of the different packages under which the project has been staged). As such, minimisation of impacts is driven through the design and construction methodology. Refer to Section 4 for more information on minimisation of impacts through design and construction methodology. Refer to Section 5 for Mitigation Measures.

2. Site Inspections

Bryce Claassens, Consulting Arborist of Urban Arbor, attended the project site to undertake tree inspections and assessments on the 18th to 21st of March 2019, 9th April of 2019, 23rd April 2019, 4th November 2019,4th December 2019, 9th September 2020, 6th November 2020, 9th December 2020, 4th February 2021, 12th February 2021 and 17th February 2021.

Urban Arbor have subsequently produced an Arboricultural Report to satisfy the Planning Approval conditions related to tree and vegetation removal. A copy of the Report is included in Appendix A. JHLOR has also been awarded additional works on for the Project related to the relocations of existing Sydney Trains services. To facilitate these works some trees and vegetation must be removed and trimmed. An addendum to the SMEW Arboricultural Report can be found in Appendix B. All figures within this report, including total number of trees to be removed and trimmed are inclusive of trees identified within the Arboricultural Report (appendix A) and its addendum (Appendix B).

A curriculum vitae for Bryce is attached in Appendix C.

3. Inspection Results

As stated within Section 7 of the Arboricultural Report and Section 7 of the addendum, Urban Arbor inspected the vegetation within a number of zones, identified by JHLOR as clashing with the design alignment or construction areas.

The results of the tree inspections can be found in Section 8, Section 9, Appendix 2 of the Urban Arbor Arboricultural Report in Appendix A of this Report and Appendix 2 of the Urban Arbor Arboricultural Report in Appendix B of this Report.

A total of 239 trees and 6 groups (or approximately 334 trees in total) will be removed as part of the works. In addition, 112 trees will be trimmed. The majority of trees will be removed for the embankment stabilisation works.

Overall clearance of vegetation has also been assessed. JHLOR has estimated the area of planted native vegetation and exotic scrub and forest to be removed as part of SMEW. Based on current calculations SMEW will require the removal of;

- Approximately 1 hectares of planted native vegetation
- Approximately 0.8 hectares of exotic scrub and forest.

It is noted that the majority of the rail corridor in which SMEW is located is vegetated with exotic grassland.

4. Alternatives to Design

Section 8 and Section 9 of the Urban Arbor Arboricultural Report in Appendix A and Appendix B of this Report identifies why these trees and vegetation must be removed. Removal of the trees and vegetation predominately relates to relocation of the Sydney Trains services and construction of the Combined Service Route (CSR) and the Retaining Walls. These design components are integral to the functionality of the new Sydney Metro line. Due to limited space within the project boundary, existing services and the access track, it is not feasible or reasonable to move these design components to accommodate the existing trees and vegetation.

In accordance with the Sydney Metro Sydenham to Bankstown Interim Tree Management Strategy tree and vegetation removal has been limited through detailed design and construction planning. Refer to Section 9 of the Arboricultural Report and Section 9 of its addendum for removal justifications.

Avoidance of impacts to trees and vegetation on the project has been undertaken based on the following hierarchy;

1. Avoid impacts to tree, ensuring design and construction falls outside the tree protection zone
2. Impacts within the tree protection zone, but no trimming or removal
3. Trimming of trees with visual or amenity value (including privacy screening)
4. Removal of trees with visual or amenity value (including privacy screening)
5. Trimming of trees with ecological value (habitat, threatened vegetation communities, threatened flora species)
6. Removal of trees with ecological value (habitat, threatened vegetation communities, threatened flora species)

It is noted that a number of trees within the corridor and at access gates will be trimmed to accommodate the design components and construction requirements.

Where trenching may impact trees, tree sensitive service installation methods will be reviewed to determine if alternative methods of service installation (such as non-destructive digging trench excavation of underbores) are practicable and feasible to undertake. Further investigation of these methods will be undertaken for trees located adjacent to the Lakemba and Wiley Park proposed services buildings locations. Some tree roots may be removed in consultation with an Arborist,.

4.1 Considerations and Restrictions

JHLOR and their designers have explored a number of means for retaining trees and vegetation on the project site. These include;

- Alignment of components such as the CSR have been located to minimise impacts to vegetation in accordance with the hierarchy listed above.
- Clearance restrictions between the CSR and Qenos high-pressure gas main have been reviewed and, pending AFC design, may be reduced in some areas. This means that the CSR can be located closer to the Qenos gas main in these locations, pulling the design alignment away from the vegetated rail embankments and fence lines. Note that the Qenos gas main is already clear of trees.
- Galvanised Steel Trough fixed to posts at regular intervals has been favoured over pit and pipe for the CSR. GST has a lesser impact on the tree protection zones (and tree roots) as small post excavations occur over 2m intervals, whereas pit and pipe CSR required extensive excavations, potentially impacting tree roots or requiring tree removal.
- Clearance between CSR and vegetation has been assessed to ensure accessibility and maintainability of the CSR while reducing impacts to vegetation.
- Use of GST instead of pit and pipe routes to minimise ground disturbance
- Climbable trees located adjacent to security components such as site fencing

There are also a number of restrictions specific to the site that have resulted in the need for tree and vegetation removal. These include;

- A Qenos high pressure gas main runs the length of the site, adjacent to the proposed CSR route. Minimum clearance must be observed due to the high risk nature of this main.
- An access track is to be maintained through the rail corridor to allow for maintenance of infrastructure and emergency response.
- The GST used for the CSR is higher than standard GST, meaning some vegetation will need to be trimmed to accommodate the GST.
- The security fencing is higher than the existing fencing within the corridor, meaning some vegetation will need to be trimmed to accommodate the fences.
- CSR transitions between corridor and bridges restrict the design alignment, meaning some vegetation at bridge abutments will need to be removed to accommodate the transitions.
- Known locations of future infrastructure such as service buildings.

It is noted that several trees identified for removal within Appendix B – Arboricultural Report Sydney Trains Service Relocations will undergo further assessment to determine if they can be maintained by tree sensitive service installation methods. As such, although these trees are listed in Appendix B for removal, this tree report will specifically exclude thee trees from removal until confirmed by further design development. These trees are;

- Lakemba: 680, 681, 3277, 3278, 3279, 3280, 3282
- Wiley Park: 3286, 3287, 3288

It is noted that several trees identified for removal within Appendix B – Arboricultural Report Sydney Trains Service Relocations are located outside of the EIS boundary. These trees must be removed as trenching works associated with the Sydney Trains service relocations will disrupt more than 10% of roots within the tree protection zone. The service routes are located at future service building locations at Wiley Park and Lakemba. Other service route types (such as GST or GLT) cannot be used in these areas as they would prohibit access to the areas during construction of the service buildings and would clash with other existing or proposed service locations.

These trees include;

- Lakemba: 3282
- Wiley Park: 3286, 3287, 3288

Tree 1510, located at Stacy Street, Bankstown is outside of the project boundary and must be removed as it is within the footprint of the proposed crane and EWP setup for Stacey Street bridge works. Alternative locations for the setup of the crane and EWP are not possible due to space restrictions and the proximity of the tree to the bridge.

Consultation with the relevant Council and a Planning Approval Consistency Assessment will be approved prior to the removal of any trees outside of the Project boundary. JHLOR acknowledges that the approval or endorsement of this Tree Report does not remove the requirements to obtain any other approval necessary to undertake the tree removal (e.g. PACA).

5. Mitigation Measures

JHLOR will implement a number of measures to ensure the correct vegetation and trees are removed and to mitigate the risk of damage to trees and vegetation that will remain. These mitigation measures include;

- Undertake all Protection Measures as identified within Appendix A and Appendix B of this Report
- The project will be designed to minimise impacts to trees where possible. This will include a review of design impacts and construction impacts on trees
- Relevant Councils and the DPIE will be consulted in regards to replacement tree planting locations. Relevant Councils will be consulted in regards to appropriate sizes for replacement trees.
- A Vegetation Removal and Trimming Permit will be implemented
- All existing trees to be retained within the site area must be protected in accordance with Australian Standard AS 4970 ‘Tree protection in development sites’ to avoid and minimise impacts
- All trees to be removed or trimmed will be appropriately demarcated
- Qualified and experienced tree loppers will be engaged to removed and trim trees
- Where works will occur in the vicinity of trees that are to remain intact, demarcation or barriers will be put in place around the tree at the extent of the structural root zone
- Access tracks will be clearly delineated and defined within the Environmental Control Maps
- Staff and workers to be educated on vegetation trimming and removal requirements
- A copy of the Tree Report must be submitted to the Secretary for information before the removal, damage and/or pruning of any trees, including those affected by the site establishment works.

- All recommendations of the Tree Report must be implemented by the Proponent, unless otherwise agreed by the Secretary.
- JHLOR will consult with the relevant Council in regards to the timing of removal of trees on council land, as required.
- JHLOR will consult with the relevant land owner's in regards to the trimming of branches that overhand into the rail corridor.
- Detailed design and construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box in accordance with REMM B1.
- Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring in accordance with REMM B2.
- Impacts to Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided in accordance with REMM B4.
- Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land in accordance with REMM B5.
- A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable in accordance with REMM B6.
- JHLOR will consult with relevant local stakeholders in regards to visual amenity impacts.

A Planning Approval Consistency Assessment (PACA) has been produced to assess the consistency of trimming turpentine trees 134, 139 and 143 as these trees fall within an area of mapped Sydney Turpentine Ironbark Forest. The PACA was approved on 4 December 2020 by Sydney Metro. Any control measures identified within the PACA will be implemented in addition to those listed above.

In addition JHLOR will maintain a Tree and Vegetation Removal Register. The register will track which tree have been removed or trimmed (based on the number within the tree report) and the area of vegetation cleared as part of the works. The JHLOR Vegetation Removal and Trimming Permit will prompt the Environmental Manager (or delegate) to record these factors during the permit authorisation site inspection.

This report will be submitted to the Secretary for information prior to the removal, damage and/or pruning of any trees.

Appendix A – Urban Arbor - Arboricultural Report

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Arboricultural Report

Site Location:
South West Metro
Marrickville to Campsie
NSW

Prepared for: John Holland Laing O'Rourke

Prepared by: Bryce Claassens
Urban Arbor Pty Ltd
Date prepared: 8 February 2021
Ref: 210208-SWM-AIA
Rev: I

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1. INTRODUCTION

1.1 Urban Arbor have been instructed by John Holland Laing O'Rourke to provide an Arboricultural Report for trees located at the site and adjoining neighbouring sites in relation to the South West Metro upgrade works. The report is to address trees to be removed or retained within each area and to specify tree protection requirements for trees to be retained.

1.2 Below is a list of all documents and information provided to assist in preparing the report;

A) Google Earth kmz Map Overlay, Sydenham to Bankstown, Received 6 February 2019.
B) Google Earth kmz Map Overlay, Sydenham to Bankstown, Received 4 April 2019.
C) Scope of Works and General Criteria, Sydney Metro City and South West, 28 November 2019.
D) Trees and Design Construction Interface, Excel Spread Sheet, Received 11 April 2019.
E) SMEW Zone 7 GST Run, AGJV, DRG No: SMCSWSSJ-JHL-WEC-CE-DWG-154303 Sheet 4 of 4, 1 May 2020.
F) Zone 11 Hutton Street Qenos Pipeline Removal – Tree Trimming Mark-up, John Holland Laing O'Rourke, Received 2 February 2021.

1.3 The site and tree inspections were carried out over a period of seven days including 18 March 2019, 19 March 2019, 20 March 2019, 21 March 2019, 9 April 2019, 23 April 2019, 4 November 2019, 4 December 2019, 9 September 2020 and 4 February 2021. Access was available to the subject site and adjoining public areas only.

2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct a visual assessment of all significant trees located within the areas identified for assessment by John Holland Laing O'Rourke. For the purpose of this report, a significant tree is a 'Long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks'.

2.1.2 Determine the trees estimated contribution years and remaining, useful life expectancy and award the trees a retention value.

2.1.3 Determine trees that are to be removed or retained within each area.

2.1.4 Specify tree protection measures for trees to be retained in accordance with AS4970-2009.

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3. LIMITATIONS

3.1 The observations and recommendations are based on the site inspections identified in section 1 only. The findings of this report are based on the observations and site conditions at the time of inspection.

3.2 All of the observations were carried out from ground level. The accuracy of the assessment of the subject trees structural condition and health is limited to the visibility of the tree at the time of inspection.

3.3 The tree inspection was visual from ground level only. No soil or tissue testing was carried out as part of the tree inspection. None of the surrounding surfaces adjacent to trees were lifted or removed during the tree inspections.

3.4 Root decay can sometimes be present with no visual indication above ground. It is also impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation. Any form of tree failure due to these activities is beyond the scope of this assessment.

3.5 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.6 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with an *spp*.

3.7 All trees included within this report have been located using a Trimble TDC100 hand held GNSS device by Urban Arbor Pty Ltd. Tree locations are only accurate within 1m - 3m. If an accurate location of the trees is required, a registered surveyor should locate the trees.

3.8 All diagrams, plans and photographs included in this report are visual aids only, and are not to scale unless otherwise indicated.

3.9 Alteration of this report invalidates the entire report.

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4. METHODOLOGY

4.1 The following information was collected during the assessment of the subject tree(s).

4.1.1 Tree common name
4.1.2 Tree botanical name
4.1.3 Tree age class
4.1.4 DBH (Trunk/Stem diameter at breast height/1.4m) - millimetres.
4.1.5 Estimated height - metres
4.1.6 Estimated crown spread (diameter of crown) - metres
4.1.7 Health
4.1.8 Structural condition
4.1.9 Amenity value
4.1.10 Estimated remaining contribution years (SULE)[1]
4.1.11 Retention value (Tree AZ)[2]
4.1.12 Notes/comments

4.2 An assessment of the trees condition was made using the visual tree assessment (VTA) model (Mattheck & Breloer, 1994).[3]

4.3 Tree diameter was measured using a DBH tape or in some cases estimated. Tree height and tree canopy spread was measured with a clinometer or in some cases estimated. All other measurements were estimations unless otherwise stated. The other tools used during the assessment were a nylon mallet, compass, camera and a steel probe.

4.4 All information was imported into our computerised geographical information system (GIS) PT-mapper pro. This software was used to measure/calculate all encroachment estimates included in this report.

4.5 All DBH measurements, tree protection zones, and structural root zones were calculated in accordance with methods set out in AS4970 Protection of trees on development sites (2009).[4]

4.6 Details of how the observations in this report have been assessed are listed in the appendices.

[1] Barrell, J. (2001), *'SULE: Its use and status in the new millennium' in Management of Mature Trees proceedings of the 4th NAAA Workshop*, Sydney, 2001. Barrell.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

[4] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

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5. SITE LOCATION AND BRIEF DESCRIPTION

5.1 The area covered in the site inspection is located within two Local Government Areas (LGA), including Inner West LGA and Canterbury Bankstown LGA. All trees within the Inner West LGA are subject to protection under the Marrickville Local Environmental Plan (LEP) 2011[5] and Development Control Plan (DCP) 2011.[6] All trees within the Canterbury Bankstown LGA are subject to protection under the Canterbury Local Environmental Plan (LEP) 2012[7] and Development Control Plan (DCP) 2012.[8]

6. GENERAL INFORMATION IN RELATION TO PROTECTING TREES ON DEVELOPMENT SITES

6.1 **Tree protection zone (TPZ):** The TPZ is the principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified in AS4970-2009 to be the area where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The TPZ also incorporates the SRZ (see below for more information about the SRZ). The TPZ is calculated by multiplying the DBH by twelve, with the exception of palms, other monocots, cycads and tree ferns, the TPZ of which have been calculated at one metre outside the crown projection. Additional information about the TPZ is included in appendix 3.

6.2 **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. The SRZ is calculated using the following formula; (DAB x 50) $^{0.42}$ x 0.64. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally, work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ. See the appendices for more information about the SRZ.

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5 *Marrickville Local Environmental Plan 2011*, https://www.legislation.nsw.gov.au/#/view/EPI/2011/645/full, accessed 26 March 2019.

6 *Marrickville Development Control Plan 2011*, https://www.innerwest.nsw.gov.au/develop/planning-controls/current-development-control-plans-dcp/marrickville-dcp, accessed 26 March 2019.

7 *Canterbury Local Environmental Plan 2012*, https://www.legislation.nsw.gov.au/#/view/EPI/2012/673, accessed 26 March 2019.

8 *Canterbury Development Control Plan 2012*, https://www.cbcity.nsw.gov.au/development/planning-control-policies/canterbury-development-control-plan-2012, accessed 26 March 2019.

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6.3 **Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

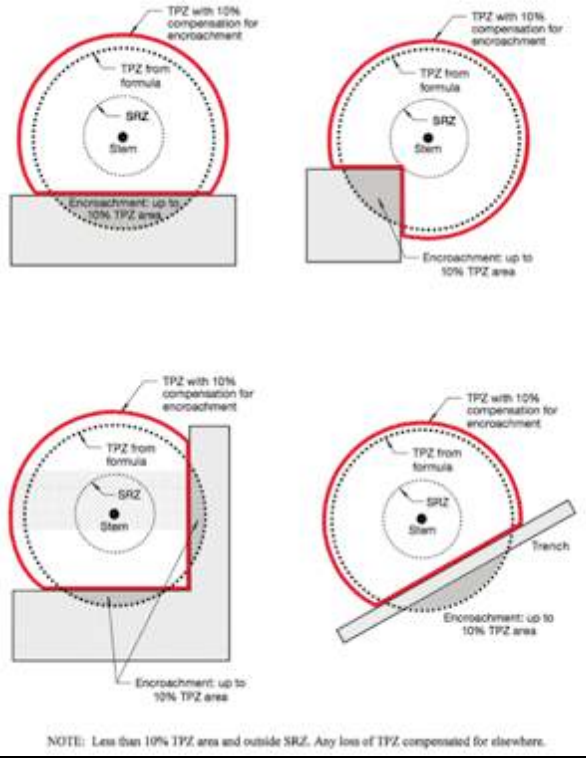

Image 1: Example minor TPZ encroachment from AS4970-2009.

6.4 **Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted. Root investigations may be required to identify roots that will be impacted during major TPZ encroachment (see appendix 3 for more information in relation to root investigations).

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7. SITE LOCATION

7.1 The areas assessed in this report have been identified by John Holland Laing O'Rourke and have been listed below. Urban Arbor carried out a site inspection to identify significant trees within each area. In appendix 1 several site plans have been included that identify the location of the significant trees that were identified in each area. The tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans in appendix 1. The following areas were assessed for significant trees that could potentially be impacted by the proposed development;

- Zone 1a
- Zone 1b
- Zone 3a
- Zone 3b
- Zone 3c
- Zone 3d
- Zone 4a
- Zone 5a
- Zone 5b
- Zone 5c
- Zone 5d
- Zone 7a
- Zone 7b
- Zone 7c
- Zone 7d
- Zone 7e
- Zone 7f
- Zone 7g
- Zone 7h
- Zone 7i
- Zone 9a
- Zone 9b
- Zone 9c
- Zone 9d
- Zone 9e
- Zone 9f
- Zone 9g
- Zone 9h
- Zone 9i
- Zone 9j
- Zone 10a
- Zone 10b
- Zone 10c
- Zone 11
- Zone 13a
- Zone 13b
- Zone 13c
- Zone 13d
- Zone 13e
- Zone 13f
- Zone 13g
- Zone 13h
- Zone 13i
- Zone 13j
- Zone 13k
- Zone 13l
- Zone 13m
- Zone 15a
- Zone 15b
- Zone 15c
- Zone 15d

8. TREE OBSERVATIONS

8.1 **Tree information:** Details of each individual tree assessed, including the observations taken during the site inspection, can be found in the tree inspection schedule in appendix 2, where the indicative tree protection zone (TPZ) and Structural Root Zone (SRZ) has been calculated for each of the subject trees. The TPZ and SRZ should be measured in radius from the centre of the trunk. Each of the subject trees have been awarded a retention value based on the observations using the Tree AZ method. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The Tree AZ categories sheet (Barrell Tree Consultancy) has been included in appendix 3 to assist with understanding the retention values. The retention value that has been allocated to the subject trees in this report is not definitive and should only be used as a guideline.

9. ASSESSMENT OF TREE IMPACTS BY AREA

9.1 The below tables include trees and other significant vegetation- refer to the notes column in Appendix 2 for classification. Significant vegetation has been identified at the discretion of Urban Arbor to meet the requirements of Condition of Approval E5 and includes shrubs and some exotic species but does not include small weeds and grasses. Totals derived for replacement planting include trees only, as defined by the *Sydney Metro City & Southwest Sydenham to Bankstown Instrument of Approval* (SSI-8256).

9.2 The trees and significant vegetation included in the following sections have been identified by John Holland Laing O'Rourke as being subject to impacts from development works. Trees and significant vegetation not included in the following sections have not been identified as being subject to development works in the information provided by John Holland Laing O'Rourke and are to be retained and protected. All trees to be retained should be protected in accordance with AS4970-2009, details of which are included in section 12. If there are any additional development works that could potentially impact additional trees, the project arborist must assess the impact of the proposed works to the condition of the trees, determining the trees viability for retention.

9.3 **Zone 1b:** The trees within this area are located within the footprint of an access point for geotechnical testing related to the future services building and are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
1d	*Lantana camara*	5. Small/Young	Z3	2.0	12.6	1.7	Exotic	Very Low
1e	*Ligustrum lucidum*	5. Small/Young	Z3	2.0	12.6	1.6	Exotic	Very Low

9.4 **Zone 3a:** Trees in this area require crown pruning to allow vehicle access along the corridor. The pruning is to provide 4.5 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
74	*Quercus robur*	2. Medium	A2	5.4	91.6	2.4	Exotic	Medium
75	*Erythrina crista-galli*	2. Medium	Z3	4.8	72.4	2.3	Exotic	Low

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Image 1: Looking West to tree 74 showing required pruning for vehicle access. Both branches are 50mm diameter epicormic growth at 4-4.5m above ground to the North of the tree.

Image 2: Looking East to tree 75 showing required pruning for vehicle access. Minor tip pruning to the North of the tree is required to allow 4.5m clearance for vehicle access (circled red).

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9.5 **Zone 3d:** The tree within this area is located within the footprint of the combined service route (CSR) and is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
G1	*Bambusa spp*	5. Small/Young	Z1	2.0	12.6	NA	Exotic	Very Low

9.6 **Zone 4a:** Trees in this area require crown pruning to allow for heavy vehicle access through the Randall Street access gate. The pruning is to provide 4.5 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
80i	*Cinnamomum camphora*	1. Long	A1	5.8	104.2	2.5	Exotic	Medium
80k	*Alnus jorullensis*	2. Medium	A2	4.7	68.8	2.3	Exotic	Medium

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Image 3: Looking North to tree 80i showing required pruning for vehicle access. The 70mm diameter third order branch to the West at 5m above existing ground is to be removed. Pruning cut marked yellow.

Image 4: Looking South West to tree 80k showing required pruning for vehicle access. The 50mm diameter third order branch to the North at 4m above existing ground is to be removed. Pruning cut yellow.

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9.7 **Zone 5a:** The tree in this area requires crown pruning for a new security fence that will be installed adjacent to the tree. The new fence will be higher than the existing fence to meet security fencing standards. The pruning is to provide a clearance of 3.5 metres above existing ground level. The following tree is dead and will require minor tip pruning to allow for the construction of the new fence;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
81	*Unknown spp*	4. Remove	Z4	2.0	12.6	1.5	Exotic	Very Low
81a	*Tibouchina spp*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
81b	*Camellia spp*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low

Image 5: Looking South West to tree 81 showing required pruning for the new security fence (shaded yellow). The tree is dead and pruning to the North of the tree is required to allow 3.5m clearance for the fence.

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Image 6: Looking South West to tree 81a showing required pruning for the new security fence (shaded yellow). Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing less than 5% of the overall live foliage area. The final cuts should not exceed 50mm in diameter.

Image 7: Looking South West to tree 81b showing required pruning for the new security fence (shaded yellow). Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing less than 5% of the overall live foliage area. The final cuts should not exceed 50mm in diameter.

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9.8 **Zone 5b:** The tree in this area requires crown pruning for a new security fence that will be installed adjacent to the tree. The new fence will be higher than the existing fence to meet security fencing standards. The pruning is to provide a clearance of 3.5 metres above existing ground level. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
81c	*Mangifera indica*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
82	*Ficus benjamina*	5. Small/Young	Z1	3.0	28.3	1.8	Native	Low

Image 8: Looking South West to tree 81c and 82 showing required pruning for the new security fence (shaded yellow). Minor tip pruning to the North of the trees is required to allow 3.5m clearance for the fence. The pruning will result in removing less than 5% of the overall live foliage area for tree 81c and removing approximately 10% of the overall live foliage area for tree 82. The final cuts should not exceed 50mm in diameter.

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9.9 **Zone 5c:** The trees within this area are located within the footprint of the combined service route (CSR). The CSR transitions from Galvanised Steel Trough (GST) to pit and pipe across Albermale Street. The trench will be approximately 1.5m deep and may require benching; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
82a	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
82e	*Callistemon linearis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low

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9.10 **Zone 7b:** The trees in this area require crown pruning to allow for heavy vehicle access through the Ewart Street access gate. The pruning is to provide 4.5 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
100	*Platanus x hispanica*	2. Medium	A1	11.5	416.9	3.3	Exotic	High
100a	*Lophostemon confertus*	1. Long	A1	9.4	277.6	3.0	Native	High

Image 9: Looking North East to the lower canopies of tree 100 and 100a showing required pruning for vehicle access. Minor tip pruning to the North and North West of the trees is required to allow 4.5m clearance for vehicle access (circled red).

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9.11 **Zone 7c:** The tree within this area is located within the footprint of the combined service route (CSR). The CSR must be placed here to allow sufficient clearance to the Qenos high pressure gas main and access track; therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
101	*Cinnamomum camphora*	5. Small/Young	Z1	5.4	91.6	2.4	Exotic	Low

9.12 **Zone 7d:** The tree within this area is located within the footprint of the combined service route (CSR). The CSR must be placed here to accommodate transition elements as the CSR changes from GST fixed to Ness Avenue bridge to GST on posts; therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
102	*Cinnamomum camphora*	2. Medium	A2	7.8	192.9	3.1	Exotic	Medium

9.13 **Zone 7e:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
107	*Acacia parramattensis*	2. Medium	A1	3.4	35.5	2.0	Native	Medium
108	*Acacia parramattensis*	2. Medium	A1	3.1	29.7	2.1	Native	Medium
109	*Acacia parramattensis*	2. Medium	A1	2.4	18.1	1.8	Native	Medium
110	*Acacia parramattensis*	2. Medium	A1	2.6	21.2	1.8	Native	Medium
111	*Acacia parramattensis*	3. Short	Z4	2.5	20.4	1.9	Native	Low
112	*Acacia parramattensis*	3. Short	Z4	2.0	13.1	1.6	Native	Low

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113	*Acacia parramattensis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
115	*Acacia parramattensis*	2. Medium	A1	3.1	29.3	2.1	Native	Medium
116	*Acacia parramattensis*	3. Short	Z4	2.3	16.3	1.7	Native	Low

9.14 **Zone 7f:** The tree in this area requires crown pruning to maintain access through the Ewart Street access gate and along the rail corridor. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
124	*Melaleuca bracteata*	1. Long	A1	6.0	114.4	2.4	Native	Medium

Image 10: Looking West to tree 124 showing required pruning for vehicle access. The three 30-50mm diameter third order branches to the North at 4m above existing ground are to be removed. Pruning cuts marked yellow.

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9.15 **Zone 7g:** The trees in this area require crown pruning to maintain vehicle access through the access gate and along the rail corridor. The pruning is to provide 4 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
134	*Syncarpia glomulifera*	1. Long	A1	6.5	132.7	3.4	Native	Medium
139	*Syncarpia glomulifera*	1. Long	A1	15.0	706.9	3.7	Native	High
143	*Syncarpia glomulifera*	1. Long	A1	6.3	124.7	3.3	Native	High
157	*Mangifera indica*	1. Long	A1	2.9	26.4	1.9	Exotic	Medium

Image 11: Looking North to tree 134 showing required pruning for vehicle access. The 150mm diameter second order branch to the Southeast at 2m above existing ground is to be removed. Pruning cut marked yellow.

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Image 12: Looking North to tree 139 showing required pruning for vehicle access. The 100mm diameter second third branch to the Southeast at 3m above existing ground is to be removed. Pruning cut marked yellow.

Image 13: Looking Northwest to tree 143 showing required pruning for vehicle access. Crown raising to a height of 3.5m above ground height will be required to the South of the tree (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 100mm in diameter.

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Image 14: Looking West to tree 157 showing required pruning for vehicle access. The crown is to be reduced by 0.5m to the South to a height 3.5m above ground height (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

9.16 **Zone 7h:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
146	*Grevillea robusta*	3. Short	Z9	4.1	52.3	2.2	Native	Medium
147	*Olea europaea*	5. Small/Young	Z1	2.5	19.2	1.8	Exotic	Low
148	*Grevillea robusta*	2. Medium	A2	5.3	87.6	2.4	Native	Medium
149	*Olea europaea*	5. Small/Young	Z1	3.4	35.5	2.1	Exotic	Low
150	*Stenocarpus sinuatus*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
151	*Ligustrum lucidum*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
152	*Persea gratissima*	5. Small/Young	Z1	2.4	18.1	1.8	Exotic	Low
153	*Eriobotrya japonica*	5. Small/Young	Z1	2.2	14.7	1.6	Exotic	Low

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9.17 **Zone 7i:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
155	*Grevillea robusta*	5. Small/Young	Z1	2.0	12.6	1.8	Native	Low
158	*Pittosporum undulatum*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
159	*Acacia saligna*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
160	*Acacia saligna*	5. Small/Young	Z1	2.6	20.4	1.8	Native	Low
161	*Acacia longifolia*	3. Short	Z9	3.3	34.4	2.1	Native	Medium

9.18 **Zone 9a:** The tree in this area requires crown pruning to allow for heavy vehicle access through the Railway Street access gate. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
188	*Callistemon salignus*	1. Long	A1	4.8	72.4	2.3	Native	High

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Image 15: Looking North East to tree 188 showing required pruning for vehicle access. The three 40mm diameter third order branches to the North at 4m above existing ground are to be removed. The 80mm second order branch to the West at 4m above ground is to be removed. Pruning cuts marked yellow.

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9.19 **Zone 9b:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
186	*Robinia pseudoacacia*	2. Medium	Z3	2.5	20.0	2.0	Exotic	Very Low
190	*Robinia pseudoacacia*	2. Medium	Z3	2.0	12.6	1.6	Exotic	Very Low
191	*Gleditsia triacanthos*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
192	*Robinia pseudoacacia*	2. Medium	Z3	2.0	13.1	1.6	Exotic	Very Low
193	*Robinia pseudoacacia*	2. Medium	Z3	2.1	13.4	1.7	Exotic	Very Low
194	*Cinnamomum camphora*	2. Medium	A1	15.0	706.9	3.7	Exotic	Medium
195	*Robinia pseudoacacia*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
196	*Pittosporum undulatum*	1. Long	A1	2.0	12.6	1.6	Native	Medium
197	*Cinnamomum camphora*	5. Small/Young	Z3	2.9	25.6	2.7	Exotic	Low
200	*Ligustrum lucidum*	5. Small/Young	Z3	2.1	14.5	1.8	Exotic	Very Low
202	*Robinia pseudoacacia*	2. Medium	Z3	2.2	14.7	1.7	Exotic	Very Low
203	*Robinia pseudoacacia*	2. Medium	Z3	2.2	14.7	1.7	Exotic	Very Low
204	*Robinia pseudoacacia*	2. Medium	Z3	3.0	28.3	1.9	Exotic	Very Low
205	*Robinia pseudoacacia*	2. Medium	Z3	3.4	35.7	2.1	Exotic	Very Low
209	*Cinnamomum camphora*	2. Medium	Z3	6.6	136.8	2.7	Exotic	Medium
210	*Cinnamomum camphora*	2. Medium	Z3	7.3	168.3	2.8	Exotic	Medium
211	*Cinnamomum camphora*	1. Long	A1	3.5	38.0	2.1	Exotic	Medium
215	*Cinnamomum camphora*	2. Medium	A1	4.7	69.4	2.6	Exotic	Medium
G5	*Robinia pseudoacacia*	5. Small/Young	Z3	2.0	12.6	1.6	Exotic	Very Low

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9.20 **Zone 9c:** The tree in this area requires crown pruning to allow for heavy vehicle access through the Foord Avenue access gate. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
214a	*Callistemon viminalis*	1. Long	A1	3.4	36.3	2.0	Native	Medium

Image 16: Looking East to tree 214a showing required pruning for vehicle access. The 40mm diameter second order branch to the North at 2m above existing ground is to be removed. Pruning cuts marked yellow.

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Image 17: Looking South to tree 214a showing required pruning for vehicle access. The two 40mm diameter third order branches to the North and North West at 3m above existing ground are to be removed. Pruning cuts marked yellow.

9.21 **Zone 9d:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
215a	*Lantana camara*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
217	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
218	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
219	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
220	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
221	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
222	*Populus spp*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low

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9.22 **Zone 9f:** The trees in this area require crown pruning to allow for heavy vehicle access through the rail corridor. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
229	*Lophostemon confertus*	1. Long	A1	10.8	366.4	3.2	Native	High
229a	*Melaleuca bracteata*	1. Long	A1	3.8	45.4	2.1	Native	Medium
229b	*Melaleuca bracteata*	1. Long	A1	3.6	40.7	2.1	Native	Medium

Image 18: Looking South East to tree 229 showing required pruning for vehicle access. The 120mm diameter epicormic growth at the base of the tree to the West is to be removed. Pruning cut marked yellow.

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Image 19: Looking South East to tree 229a and 229b showing required pruning for vehicle access. For tree 229a the 90mm diameter lowest primary branch to the South at 2m is to be removed. For tree 229b the 90mm diameter second order branch to the South at 2m is to be removed. Pruning cuts yellow.

9.23 **Zone 9g:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
242	*Callistemon viminalis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
243	*Acacia binervia*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low

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9.24 **Zone 9h:** The trees in this area require crown pruning for a new security fence that will be installed adjacent to the trees. The new fence will be higher than the existing fence to meet security fencing standards. The pruning is to provide a clearance of 3.5 metres above existing ground level. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
238	Cupressus sempervirens	2. Medium	A1	2.9	26.4	1.9	Exotic	Medium
239	Cupressus sempervirens	1. Long	A1	5.9	109.4	2.5	Exotic	Medium
240	Cupressus sempervirens	2. Medium	A1	5.8	105.7	2.5	Exotic	Medium
241	Cupressus torulosa	1. Long	A1	4.6	66.5	2.3	Exotic	Medium
243a	*Persea gratissima*	5. Small/Young	Z1	2.4	18.1	1.8	Exotic	Low
244	*Acer palmatum*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
246	*Callistemon viminalis*	1. Long	A1	2.0	12.6	1.6	Native	Medium
247	*Callistemon viminalis*	1. Long	A1	2.2	14.7	1.7	Native	Medium
248	*Callistemon viminalis*	1. Long	A1	2.0	12.6	1.6	Native	Medium
249	*Magnolia grandiflora*	2. Medium	A2	10.8	366.4	3.2	Exotic	High

Image 20: Looking North East to tree 238, 239, 240 and 241. Showing required pruning for the new security fence (shaded yellow). Crown raising will be required to allow 3.5m clearance for the fence. The pruning will result in removing less than 5% of the overall live foliage area of the trees. The final cuts should not exceed 50mm in diameter.

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Image 21: Looking South East to tree 243a showing required pruning for the new security fence. The removal of the 100mm diameter second order branch at 3m to the West is required to allow 3.5m clearance for the fence. Pruning cut marked yellow.

Image 22: Looking South East to tree 244 showing required pruning for the new security fence. Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 20% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

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Image 23: Looking South East to tree 246 showing required pruning for the new security fence. The removal of the 50mm diameter lowest primary branch at 2m to the North is required to allow 3.5m clearance for the fence. Pruning cut marked yellow.

Image 24: Looking South East to tree 247 showing required pruning for the new security fence. The removal of the 100mm diameter lowest primary branch at 2.5m to the North East is required to allow 3.5m clearance for the fence. Pruning cut marked yellow.

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Image 25: Looking South East to tree 248 showing required pruning for the new security fence. Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 5% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

Image 26: Looking South East to tree 249 showing required pruning for the new security fence. Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 5% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

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Image 27: Looking South East to tree 249 showing required pruning for the new security fence. The removal of the 250mm diameter first order branch at 1m to the North West is required.

9.25 **Zone 9i:** The trees in this area require crown pruning for a new security fence that will be installed adjacent to the trees. The new fence will be higher than the existing fence to meet security fencing standards. The pruning is to provide a clearance of 3.5 metres above existing ground level. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
250	*Cinnamomum camphora*	1. Long	A1	14.4	651.4	3.6	Exotic	Medium
251	*Citrus spp*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Low
252	*Ligustrum sinense*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
253	*Cestrum parqui*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
254	*Unknown spp*	3. Short	Z4	5.8	104.2	2.4	Exotic	Medium
254a	*Psidium guajava*	5. Small/Young	Z1	2.2	14.7	1.7	Exotic	Low

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Image 28: Looking South East to tree 250 showing required pruning for the new security fence. Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 5% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

Image 29: Looking South East to tree 251 showing required pruning for the new security fence. Minor tip pruning to the North of the tree is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 10% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

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Image 30: Looking South West to tree 252, 253, 254 and 254a. Minor tip pruning to the North of the trees is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 5% of the overall live foliage area of each tree. The finished cut diameter should not exceed 50mm.

9.26 **Zone 9j:** The tree in this area requires significant crown pruning to allow for heavy vehicle access through the Hutton Street access gate. The required pruning will involve removing approximately 30-40% of the overall live foliage area of the tree indicating the condition of the tree will be significantly impacted, therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
257	*Jacaranda mimosifolia*	2. Medium	A1	4.8	73.5	2.4	Exotic	Medium

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9.27 **Zone 10a:** The trees within this area are located within the footprint or directly adjacent to a major vehicle access route and the combined service route (CSR). The CSR will consist of a buried pit and pipe in this area, therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
296	*Cinnamomum camphora*	3. Short	Z3	5.6	96.9	2.7	Exotic	Low
297	*Casuarina glauca*	3. Short	Z9	2.2	14.7	1.6	Native	Low
298	*Casuarina glauca*	3. Short	Z9	2.7	22.1	2.0	Native	Low
299	*Casuarina glauca*	3. Short	Z9	4.3	58.6	2.3	Native	Medium
300	*Casuarina glauca*	3. Short	Z9	5.8	104.2	2.5	Native	Medium
301	*Melaleuca styphelioides*	1. Long	A1	3.0	28.3	1.8	Native	Medium
302	*Callistemon viminalis*	5. Small/Young	Z1	4.2	55.4	2.1	Native	Low
303	*Melaleuca styphelioides*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
304	*Eucalyptus elata*	1. Long	A1	3.2	33.0	2.0	Native	Medium

9.28 **Zone 10c:** The tree within this area is located within the footprint or directly adjacent to the combined service route (CSR), therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
305	*Acacia spp*	3. Short	Z4	4.1	52.3	2.2	Native	Medium

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9.29 **Zone 11:** The trees in this area require crown pruning to allow for the Qenos pipeline removal/excavations and machinery access. The pruning is to provide 5.0 metre of clearance below the canopy of the tree. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
260	*Cinnamomum camphora*	3. Short	Z3	6.0	113.1	2.5	Exotic	Low
262	*Cinnamomum camphora*	3. Short	Z3	15.0	706.9	3.8	Exotic	Low
272	*Acacia longifolia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low

Image 31: Looking West towards tree 260, showing required pruning for the Qenos pipeline removal. The North side of the crown is to be raised by 5m (hatched yellow). The pruning will result in removing 10-15% of the overall live foliage area. Final pruning cuts should not exceed 100mm in diameter.

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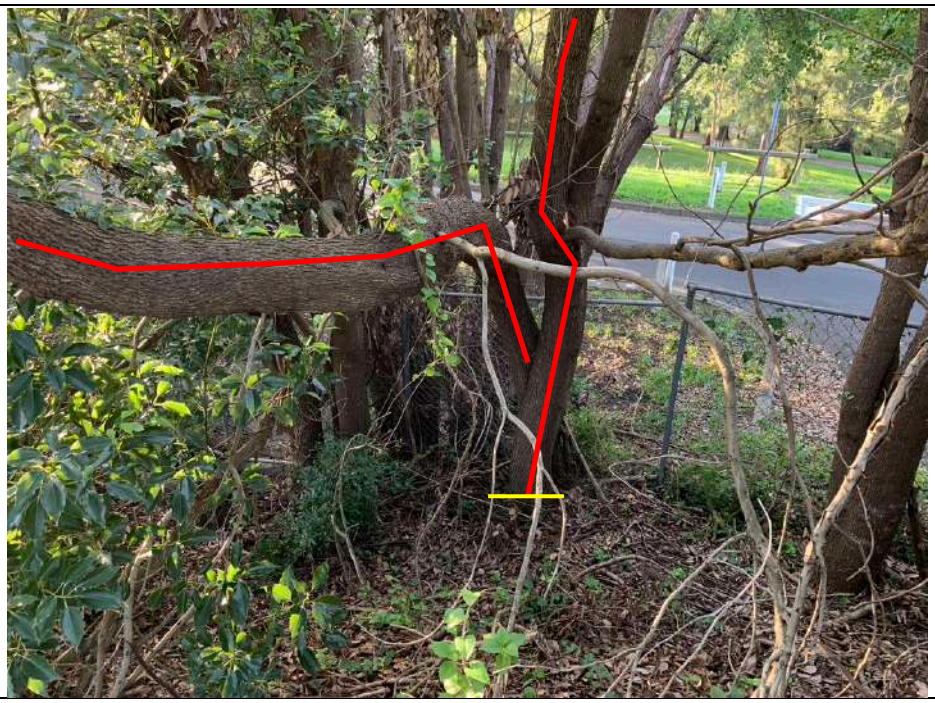

Image 32: Looking South towards tree 262, showing required pruning for the Qenos pipeline removal. The tree is multi stemmed and the tree has been continuously lopped for power line clearance. The two Western most stems are to be removed as close to the ground as practical. The pruning will result in removing 20-25% of the overall live foliage area of the tree. The remaining stems will be unaffected by the pruning.

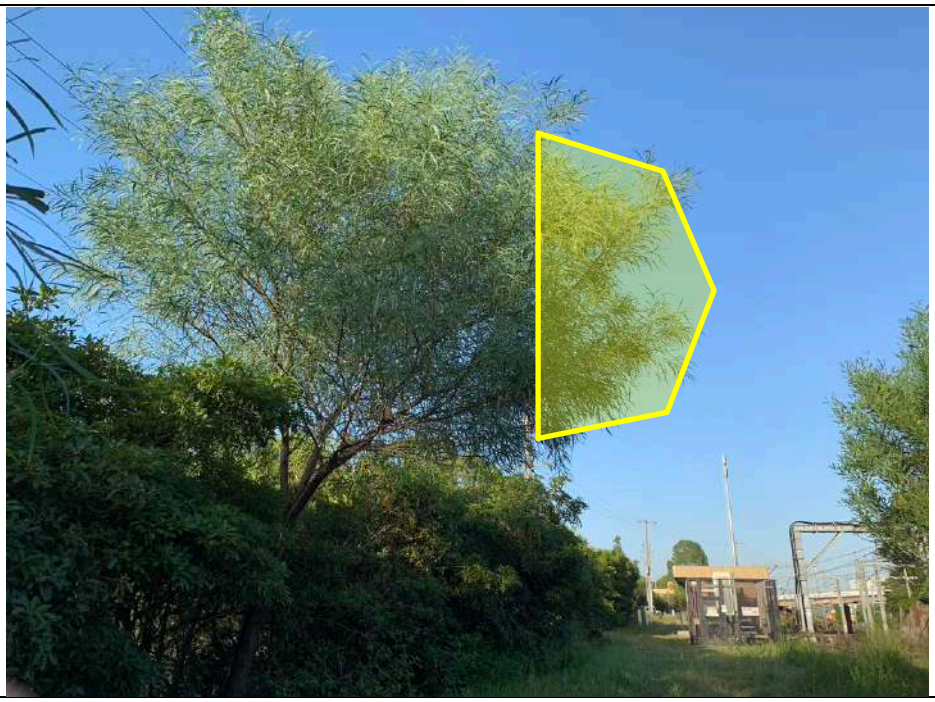

Image 33: Looking West towards tree 272, showing required pruning for the Qenos pipeline removal. The North side of the crown is to be reduced by 1.5m – 2.0m (hatched yellow). The pruning will result in removing 10-15% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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9.30 **Zone 13a:** The trees within this area are located within a proposed construction laydown area. There is currently insufficient space for material storage for the retaining wall construction; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
G7	*Casuarina glauca*	1. Long	A1	3.0	28.3	2.0	Native	Medium

9.31 **Zone 13b:** The trees within this area are located within the footprint or directly adjacent to the proposed retaining wall construction; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
327	*Leptospermum laevigatum*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low
328	*Casuarina cunninghamiana*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
329	*Melaleuca linarifolia*	1. Long	A1	2.2	14.7	1.7	Native	Medium
G8	*Mixed spp*	5. Small/Young	Z1	2.0	12.6	1.7	Native	Low
330	*Callistemon viminalis*	2. Medium	A1	2.7	23.6	2.0	Native	Medium

9.32 **Zone 13bb:** The tree in this area require crown pruning to allow for heavy vehicle access into the rail corridor via Broughton Street. The pruning is to provide 4.0 metre of clearance below the canopy of the tree. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
329a	*Callistemon viminalis*	1. Long	A1	4.3	58.6	2.4	Native	Medium

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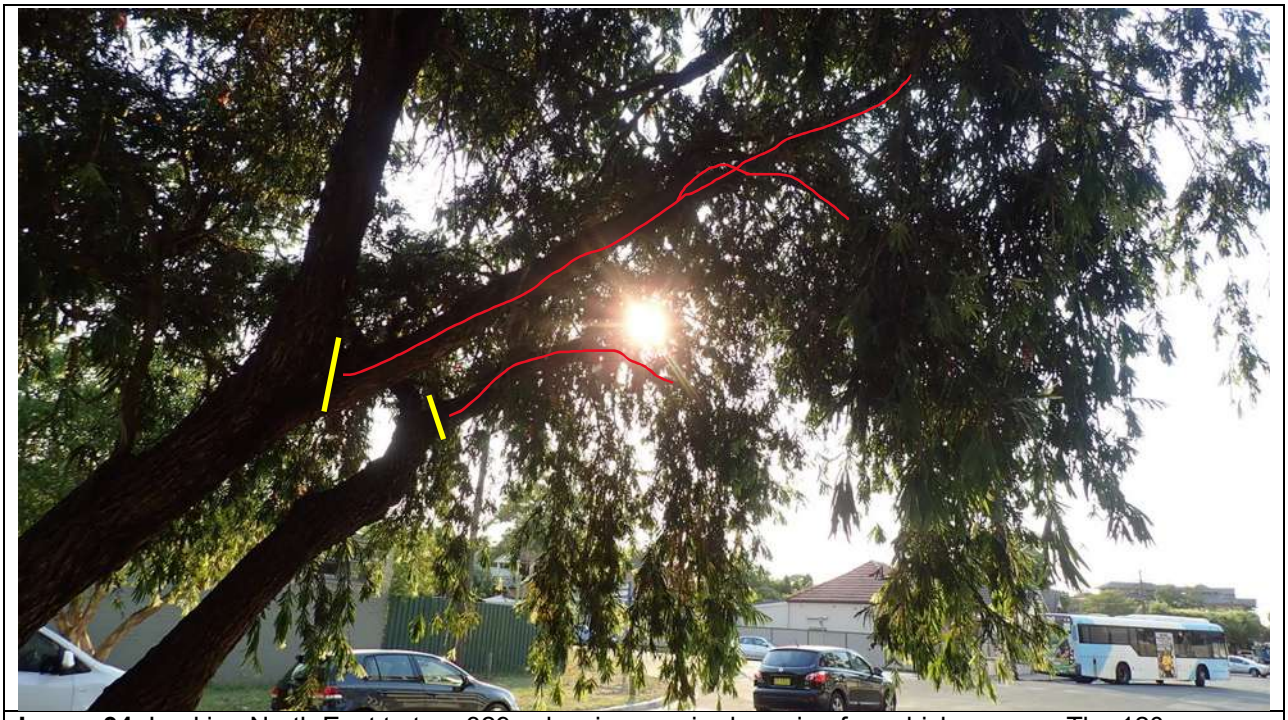

Image 34: Looking North East to tree 329a showing required pruning for vehicle access. The 120mm diameter second order branch to the South East and 2.2m above ground is to be removed and the 100mm diameter second order branch to the East at 2.2m above ground is to be removed. Pruning cuts yellow. Additional crown raising to 4m above ground will also be required for smaller low hanging branches.

9.33 **Zone 13c:** The tree within this area is located within the footprint or directly adjacent to the combined service route (CSR), therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
333	*Casuarina glauca*	3. Short	Z9	5.3	87.6	2.4	Native	Medium

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9.34 **Zone 13d:** The trees within this area are located within the footprint or directly adjacent to the proposed retaining wall construction or within the footprint of the jet grouting equipment; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
334	*Casuarina cunninghamiana*	4. Remove	Z4	3.0	28.3	1.9	Native	Low
335	*Casuarina cunninghamiana*	4. Remove	Z4	3.0	28.3	2.0	Native	Low
336	*Casuarina cunninghamiana*	1. Long	A1	6.7	141.9	2.7	Native	High
337	*Casuarina cunninghamiana*	1. Long	A1	4.0	49.3	2.1	Native	Medium
338	*Casuarina cunninghamiana*	1. Long	A1	4.0	49.3	2.1	Native	Medium
339	*Casuarina cunninghamiana*	3. Short	Z9	4.1	52.3	2.2	Native	Medium
340	*Casuarina cunninghamiana*	1. Long	A1	2.0	12.6	1.7	Native	Medium
341	*Acacia longifolia*	3. Short	Z4	3.4	35.5	2.0	Native	Low
342	*Acacia spp*	4. Remove	Z4	2.2	14.7	1.8	Native	Low
343	*Acacia longifolia*	5. Small/Young	Z1	2.9	26.1	1.9	Native	Low
344	*Corymbia maculata*	3. Short	Z9	2.6	21.9	1.8	Native	Medium
345	*Acacia longifolia*	3. Short	Z10	4.9	76.0	2.3	Native	Medium
346	*Corymbia maculata*	5. Small/Young	Z1	2.5	19.6	2.0	Native	Medium
347	*Casuarina glauca*	3. Short	Z9	2.0	12.6	1.6	Native	Low
348	*Acacia longifolia*	2. Medium	A2	2.5	20.0	1.8	Native	Medium
349	*Casuarina glauca*	1. Long	A1	2.3	16.3	1.7	Native	Medium
350	*Corymbia maculata*	1. Long	A1	5.5	95.7	2.4	Native	High
351	*Casuarina glauca*	3. Short	Z9	2.3	17.2	2.1	Native	Low
352	*Casuarina glauca*	3. Short	Z9	3.4	35.5	2.0	Native	Medium
353	*Casuarina glauca*	5. Small/Young	Z9	2.0	12.6	1.6	Native	Low
354	*Corymbia maculata*	2. Medium	A2	4.9	76.0	2.4	Native	Medium
355	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
356	*Cinnamomum camphora*	5. Small/Young	Z3	2.1	13.6	1.8	Exotic	Low
357	*Unknown spp*	4. Remove	Z4	2.0	12.6	1.5	Exotic	Low
358	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
359	*Unknown spp*	4. Remove	Z4	2.0	12.6	1.6	Exotic	Low
360	*Casuarina cunninghamiana*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Medium
361	*Unknown spp*	4. Remove	Z4	2.4	18.1	1.8	Exotic	Low
362	*Acacia parramattensis*	3. Short	Z4	2.0	12.6	1.7	Native	Low
363	*Unknown spp*	4. Remove	Z4	2.2	14.7	1.7	Exotic	Low

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364	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
365	*Acacia parramattensis*	2. Medium	A1	2.0	12.6	1.6	Native	Medium
G9	*Syncarpia glomulifera*	3. Short	Z9	2.2	14.7	1.7	Native	Medium
366	*Schinus molle*	2. Medium	A2	6.0	113.1	2.6	Exotic	Medium
374	*Quercus palustris*	3. Short	Z9	3.6	40.7	2.1	Exotic	Medium
375	*Quercus palustris*	3. Short	Z9	4.3	58.6	2.3	Exotic	Medium
376	*Pittosporum undulatum*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
377	*Quercus palustris*	3. Short	Z9	2.9	26.1	1.9	Exotic	Medium
378	*Leptospermum spp*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
379	*Casuarina cunninghamiana*	1. Long	A1	2.0	12.6	1.5	Native	Medium
380	*Casuarina cunninghamiana*	1. Long	A1	2.0	12.6	1.5	Native	Medium
381	*Casuarina cunninghamiana*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
382	*Acacia longifolia*	3. Short	Z9	2.0	12.6	1.5	Native	Low
383	*Pittosporum undulatum*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
384	*Syncarpia glomulifera*	3. Short	Z9	2.4	17.6	1.8	Native	Medium
385	*Unknown spp*	4. Remove	Z4	4.0	49.3	2.1	Native	Low
386	*Syncarpia glomulifera*	1. Long	A1	2.5	19.0	1.8	Native	Medium
387	*Casuarina glauca*	2. Medium	A1	2.0	12.6	1.5	Native	Medium
388	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
389	*Syncarpia glomulifera*	1. Long	A1	2.6	21.9	1.8	Native	Medium
390	*Syncarpia glomulifera*	1. Long	A1	2.5	20.0	1.8	Native	Medium
391	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.7	Native	Low
392	*Pittosporum undulatum*	5. Small/Young	Z1	2.2	14.7	1.6	Native	Low
393	*Quercus palustris*	4. Remove	Z5	9.0	254.5	2.9	Exotic	Medium
394	*Quercus palustris*	3. Short	Z9	2.7	22.8	2.2	Exotic	Medium
395	*Quercus palustris*	3. Short	Z9	2.8	24.8	2.0	Exotic	Medium
396	*Quercus palustris*	3. Short	Z10	5.3	87.6	2.4	Exotic	Medium
397	*Syncarpia glomulifera*	3. Short	Z9	2.0	12.6	1.6	Native	Medium
398	*Syncarpia glomulifera*	3. Short	Z9	2.6	21.9	1.8	Native	Medium
399	*Quercus palustris*	3. Short	Z9	4.4	60.7	2.8	Exotic	Medium
400	*Quercus palustris*	3. Short	Z9	5.1	82.0	3.2	Exotic	Medium
401	*Casuarina glauca*	3. Short	Z9	4.8	72.4	2.3	Native	Low
402	*Acacia longifolia*	2. Medium	Z1	2.4	18.1	1.7	Native	Low

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9.35 **Zone 13e:** The trees within this area are located within the footprint or directly adjacent to the proposed retaining wall construction; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
403	*Callistemon viminalis*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
404	*Acacia spp*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
405	*Triadica sebifera*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
406	*Triadica sebifera*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
407	*Triadica sebifera*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low
408	*Quercus palustris*	2. Medium	A2	5.3	87.6	2.4	Exotic	Medium
409	*Triadica sebifera*	2. Medium	A2	3.8	45.8	2.4	Exotic	Medium
410	*Triadica sebifera*	2. Medium	A2	5.0	79.8	2.3	Exotic	Medium
411	*Quercus palustris*	3. Short	Z9	5.3	88.0	3.2	Exotic	Medium
412	*Cinnamomum camphora*	5. Small/Young	Z3	2.0	12.6	2.4	Exotic	Low
413	*Quercus palustris*	5. Small/Young	Z9	5.0	79.8	2.4	Exotic	Medium
414	*Lagunaria patersonia*	2. Medium	A2	4.1	52.3	2.3	Native	Medium
415	*Melaleuca quinquenervia*	3. Short	Z10	9.6	289.5	3.1	Native	High
416	*Pittosporum undulatum*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
417	*Triadica sebifera*	5. Small/Young	Z1	2.0	12.6	1.7	Exotic	Low
418	*Eucalyptus nicholii*	3. Short	Z10	6.2	122.3	2.6	Native	Medium
419	*Ficus rubiginosa*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
420	*Syncarpia glomulifera*	5. Small/Young	Z1	2.6	21.4	2.3	Native	Low
G10	*Mixed spp*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
426	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.7	Native	Low
427	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.8	Native	Low
428	*Syncarpia glomulifera*	5. Small/Young	Z1	2.1	14.5	2.0	Native	Low
429	*Syncarpia glomulifera*	5. Small/Young	Z1	2.0	12.6	1.7	Native	Low
430	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
432	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
433	*Casuarina cunninghamiana*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
434	*Pittosporum undulatum*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low
435	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
436	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
438	*Casuarina glauca*	3. Short	Z9	2.0	12.6	1.6	Native	Low

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439	*Melaleuca styphelioides*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
440	*Melaleuca styphelioides*	5. Small/Young	Z1	2.0	12.6	1.6	Native	Low
441	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.9	2.4	Native	Low
442	*Ailanthus altissima*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
443	*Casuarina glauca*	2. Medium	A2	2.0	12.6	1.6	Native	Medium
444	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.6	1.8	Native	Low
447	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
448	*Casuarina glauca*	4. Remove	Z5	2.0	12.6	1.7	Native	Low
449	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
450	*Melaleuca quinquenervia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
451	*Melaleuca quinquenervia*	3. Short	Z9	5.7	100.7	2.7	Native	Medium
G11	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
453	*Acacia parramattensis*	2. Medium	A1	2.0	12.6	1.5	Native	Medium
454	*Acacia parramattensis*	3. Short	Z9	2.0	12.6	1.5	Native	Low
456	*Syncarpia glomulifera*	1. Long	A1	2.0	13.1	1.6	Native	Medium
457	*Acacia parramattensis*	2. Medium	A2	2.0	12.6	1.6	Native	Medium

9.36 **Zone 13f:** The trees within this area are located within the footprint or directly adjacent to the proposed retaining wall construction; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
460	*Melaleuca styphelioides*	3. Short	Z9	3.4	35.5	2.1	Native	Medium
463	*Casuarina glauca*	5. Small/Young	Z1	2.1	14.5	2.0	Native	Medium
464	*Casuarina glauca*	5. Small/Young	Z1	2.1	13.6	1.9	Native	Low
465	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
467	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
468	*Pittosporum undulatum*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low
470	*Ailanthus altissima*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
471	*Ailanthus altissima*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
473	*Ailanthus altissima*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low
474	*Melaleuca linarifolia*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
475	*Melaleuca quinquenervia*	3. Short	Z9	3.6	40.7	2.1	Native	Medium
480	*Quercus ilex*	3. Short	Z9	4.2	55.4	2.3	Exotic	Medium
482	*Cinnamomum camphora*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low

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9.37 **Zone 13h:** The tree within this area is located within the footprint or directly adjacent to the proposed noise wall construction and access route; therefore the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
498	*Liquidambar styraciflua*	2. Medium	Z3	6.0	113.1	2.6	Exotic	Low

9.38 **Zone 13i:** The trees within this area are located within the footprint or directly adjacent to the proposed noise wall construction and access route; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
499	*Pittosporum undulatum*	1. Long	A1	2.9	26.1	1.9	Native	Medium
500	*Nerium oleander*	5. Small/Young	Z1	4.2	55.4	2.1	Exotic	Low
501	*Celtis sinensis*	5. Small/Young	Z3	3.0	28.3	1.8	Exotic	Very Low
502	*Syagrus romanzoffianum*	1. Long	Z3	3.6	40.7	NA	Exotic	Low

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9.39 **Zone 13j:** The trees within this area are located within the footprint or directly adjacent to the proposed noise wall construction and access route; therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
503	*Casuarina spp*	1. Long	A1	2.6	21.9	1.8	Native	Medium
504	*Eucalyptus microcorys*	2. Medium	A2	8.6	234.5	3.0	Native	High
505	*Acacia parramattensis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
506	*Acacia parramattensis*	4. Remove	Z4	2.0	12.6	1.5	Native	Very Low
507	*Pittosporum undulatum*	5. Small/Young	Z1	3.0	28.3	1.8	Native	Low
508	*Acacia parramattensis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
509	*Acacia spp*	4. Remove	Z4	3.4	35.5	2.0	Native	Very Low
510	*Acacia parramattensis*	2. Medium	A1	2.2	14.7	1.7	Native	Medium

9.40 **Zone 13l:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
512	*Grevillea robusta*	2. Medium	A1	2.0	13.1	1.6	Native	Medium
513	*Grevillea robusta*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
514	*Celtis sinensis*	5. Small/Young	Z3	3.0	28.3	1.8	Exotic	Very Low
515	*Cotoneaster spp*	5. Small/Young	Z1	2.0	12.6	1.8	Exotic	Low

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9.41 **Zone 13m:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
511	*Melaleuca armillaris*	2. Medium	A1	3.2	31.2	2.4	Native	Medium
511a	*Phoenix canariensis*	4. Remove	Z4	2.0	12.6	NA	Exotic	Very Low

9.42 **Zone 13n:** The trees in this area require crown pruning for a new security fence that will be installed adjacent to the trees. The new fence will be higher than the existing fence to meet security fencing standards. The pruning is to provide a clearance of 3.5 metres above existing ground level. The following trees have been identified in this area

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
517	*Pittosporum undulatum*	1. Long	A1	3.5	38.5	2.0	Native	Medium
522	*Grevillea robusta*	1. Long	A1	5.4	91.6	2.4	Native	Medium

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Image 35: Looking North West to tree 517 showing required pruning for the new security fence (Shaded yellow). Crown raising is required to allow 3.5m clearance for the fence. The pruning will result in removing approximately 10% of the overall live foliage area. The finished cut diameter should not exceed 50mm.

Image 36: Looking North West to tree 522 showing required pruning for the new security fence. The removal of the two lowest primary branches to the West at 3m and 3.5m above soil grade is required to allow 3.5m clearance for the fence. The branches are 100mm in diameter. Pruning cuts marked yellow.

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9.43 **Zone 15a:** The trees within this area are located within the footprint or directly adjacent to the combined service route (CSR), therefore the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
523	*Eucalyptus microcorys*	3. Short	Z9	3.8	46.3	2.1	Native	Medium
524	*Lophostemon confertus*	1. Long	A1	2.0	12.6	1.6	Native	Medium
525	*Eucalyptus microcorys*	1. Long	A1	3.4	35.5	2.0	Native	Medium

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10. CONCLUSIONS

10.1 **Table 2:** Summary of the impact to trees and vegetation by the development;

Impact	Reason	Category A	Category Z
		A	Z
Trees recommended to be removed	Building construction, new surfacing and/or proximity, trees in poor condition or low value trees to be removed and replaced	102, 107, 108, 109, 110, 115, 148, 194, 196, 211, 215, 257, 301, 304, G7, 329, 330, 336, 337, 338, 340, 348, 349, 350, 354, 365, 366, 379, 380, 386, 387, 389, 390, 408, 409, 410, 414, 443, 453, 456, 457, 499, 503, 504, 510, 511, 512, 524, 525 **(Forty-eight trees and one group)**	1e, 82a, 101, 111, 112, 113, 116, 146, 147, 149, 150, 151, 152, 153, 155, 158, 159, 160, 161, 186, 190, 191, 192, 193, 195, 197, 200, 202, 203, 204, 205, 209, 210, G5, , 217, 218, 219, 220, 221, 222, 243, 296, 297, 298, 299, 300, 302, 305, 328, G8, 333, 334, 335, 339, 341, 342, 343, 344, 345, 346, 347, 351, 352, 353, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, G9, 374, 375, 376, 377, 378, 381, 382, 383, 384, 385, 388, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 411, 412, 413, 415, 416, 418, 419, 420, G10, 426, 427, 428, 429, 430, 432, 433, 434, 435, 436, 439, 440, 441, 442, 444, 447, 448, 449, G11, 451, 454, 460, 463, 464, 465, 467, 468, 470, 471, 473, 474, 480, 482, 498, 501, 502, 506, 509, 511a, 513, 515, 523 **(One hundred and forty-nine trees and five groups)**
Vegetation recommended to be removed	Building construction, new surfacing and/or proximity, individuals in poor condition or low value individuals to be removed and replaced	None	1d, G1, 82e, 215a, 242, 303, 327, 417, 438, 450, 475, 500, 505, 507, 508, 514 **(Fifteen individuals and One group)**
Trees recommended to be retained requiring canopy pruning	Clearance for construction works i.e. vehicle access, new security fence, CSR	74, 80i, 80k, 100, 100a, 124, 134, 139, 143, 157, 188, 214a, 229, 229a, 229b, 238, 239, 240, 241, 246, 247, 248, 249, 250, 329a, 517, 522 **(Twenty-seven trees)**	75, 81 81a, 81b, 81c, 82, 243a, 244, 251, 254, 254a, 260, 262, 272 **(Fourteen trees)**
Vegetation recommended to be retained requiring canopy pruning	Clearance for construction works i.e. vehicle access, new security fence, CSR	None	252, 253 **(Two individuals)**

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Table 2: Summary of the impact to trees and vegetation by the development (continued);

Impact	Reason	Category A	Category Z
		A	Z
Trees recommended to be retained	Removal of existing surfacing/structures and/or installation of new surfacing/structures will not impact the trees viability	1, 1f, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 68, 69, 70, 71, 72, 73, 77, 78, 79, 80, 80a, 80b, 80c, 80d, 80e, 80f, 80g, 80h, 80j, 80l, 80m, 82b, 82c, 83, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 104, 105, 106, 117, 118, 119, 120, 121, 122, 123, 128, 129, 130, 131, 135, 137, 138, 140, 142, 156, 163, 165, 171, G4, 180, 187, 198, 199, 213, 214, 215b, 216, 224, 225, 226, 227, 228, 234, 235, 236, 237, 258, 259, 261, 304a, 307, 308, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 367, 368, 369, 370, 371, 372, 373, 423, 445, 455, 458, 459, 461, 462, 466, 469, 477, 478, 479, 483, 487, 488, 519, 520, 521, 526, 527, 528, 529, 530, 531, 533, 534, 537, 538 **(One hundred and ninety-five trees and one group)**	1a, 1c, 7, 24, 64, 76, G1a, 84, 85, 126, 127, 132, 133, 136, 141, 144, 145, 154, 162, G2, 164, 166, 167, 168, 169, 170, G3, 172, 173, 174, 175, 176, 177, 178, 179, 181, 182, 183, 184, 185, 189, 201, 206, 207, 208, 212, 216a, 223, 230, 231, 245, 255, 256, 263, 264, 265, 266, 267, 268, 269, 270, 271, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, G6, 293, 294, 306, 310, 311, 312, 313, 314, 315, 316, 331, 332, 421, 422, 424, 425, 436, 437, 446, 452, 475, 476, 481, , 484, 485, 486, 489, 490, 491, 492, 493, 494, 495, 496, 497, , 516, 518, 535, 536, 539, 540, 541, 542, 543, 544, 545 **(One hundred and twenty-five trees and four groups)**
Vegetation recommended to be retained	Removal of existing surfacing/structures and/or installation of new surfacing/structures will not impact the individuals viability	None	1b, 82d, 125, G5a, 232, 233, 295, 309, 532 **(Eight individuals and one group)**

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11. RECOMMENDATIONS

11.1 This report assesses the impact of a proposed development to five hundred and fifty-eight trees (558) and eleven (11) groups of trees that are located at selected areas around the development site.

11.2 One hundred and ninety-seven (197) trees and six (6) groups of trees have been recommended for removal to accommodate the development. Forty-eight (48) trees and one (1) group of trees recommended for removal are higher value category A retention value trees. One hundred and forty-nine (149) trees and five (5) groups of trees recommended for removal are lower value category Z retention value trees that generally should not be a constraint to the development. Refer to table 2 (section 10.1) for tree numbers within this category.

11.3 The total number of trees within the six groups of trees recommended for removal is approximately 95 trees. See appendix 2 for the approximate number of trees within each individual group.

11.4 Forty-one (41) trees have been identified for crown pruning to provide clearance for proposed construction works. Refer to table 2 (section 10.1) for tree numbers within this category. All pruning works must be completed in accordance with AS4373-2007 Pruning of Amenity Trees.

11.5 The remaining three hundred and twenty (320) trees and five (5) groups of trees are to be retained and protected. All trees to be retained should be protected in accordance with AS4970-2009, details of which are included in section 12. Refer to table 2 (section 9.1) for tree numbers within this category.

11.6 Since the previous revision of this report was completed (Rev B – 29 July 2019), the removal of eight (8) trees and one (1) group of trees has been carried out by an external source not affiliated with John Holland Laing O'Rourke. The trees that were removed include tree 101, 215a, 217, 218, 219, 220, 221, 222 and G1. These trees are lower value category Z retention value trees that are also recommended for removal within this report – see section 11.2.

11.7 Site plans have been included in appendix 1 to identify tree locations. The following site plans are included in appendix 1;

- Appendix 1A – Site Plan Overview
- Appendix 1B – Map 1
- Appendix 1B1 – Map 1a
- Appendix 1C – Map 2
- Appendix 1D – Map 3
- Appendix 1E – Map 4
- Appendix 1F – Map 5
- Appendix 1G – Map 6
- Appendix 1H – Map 7
- Appendix 1I – Map 8
- Appendix 1J – Map 9
- Appendix 1K – Map 10
- Appendix 1L – Map 11
- Appendix 1M – Map 12
- Appendix 1N – Map 13
- Appendix 1O – Map 14

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12. TREE PROTECTION REQUIREMENTS

12.1 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site. This report and a copy of the site plans (Appendix 1) drawing must also be made available to any contractor prior to works commencing and during any on site operations.

12.2 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

12.3 **Tree work:** All tree work should be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

12.4 **Initial site meeting/on-going regular inspections:** The project Arborist is to hold a pre-construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to tree protection that may arise. In accordance with AS4970-2009, the project Arborist should carryout regular site inspections to ensure works are carried out in accordance with this document throughout the development process. Site inspections are recommended on a monthly frequency throughout the development.

12.5 **Site Specific Tree Protection Recommendations:** Site specific tree protection measures should be specified by the project Arborist during the initial site meeting. All development works that are within the TPZ of the trees to be retained should be discussed during this meeting and required tree protection measures agreed in writing.

12.6 **Tree Protection Specifications:** It is the responsibility of the principle contractor to install tree protection prior to works commencing at the site (prior to demolition works) and to ensure that the tree protection remains in adequate condition for the duration of the development. The tree protection must not be moved without prior agreement of the project Arborist. The project Arborist must inspect that the tree protection has been installed in accordance with this document and AS4970-2009 prior to works commencing.

12.6.1 Protective fencing: The protective fencing must be constructed from materials that complies with all other relevant standards for fencing and temporary structures within the rail corridor, i.e. bollards, flagging etc. The fencing should only be removed for the landscaping/soft works phase. Where it is not feasible to install fencing at the specified location due to factors such as restricting access to areas of the site or for constructing new structures, an alternative location should be specified and must be installed in accordance with AS4970-2009.

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12.6.2 TPZ signage: Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

12.6.3 Trunk and Branch Protection: The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

12.6.4 Mulch: Any areas of the TPZ located inside the subject site must be mulched to a depth of 75mm with good quality mulch. Mulch must not be built-up around the trunk the trees as it can cause collar rot.

12.6.5 Ground Protection: Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified by the project Arborist as required.

12.6.6 Temporary irrigation: Temporary irrigation should distribute water evenly throughout the area of the TPZ. The irrigation should be used for at minimum one hour daily throughout all stages of the development.

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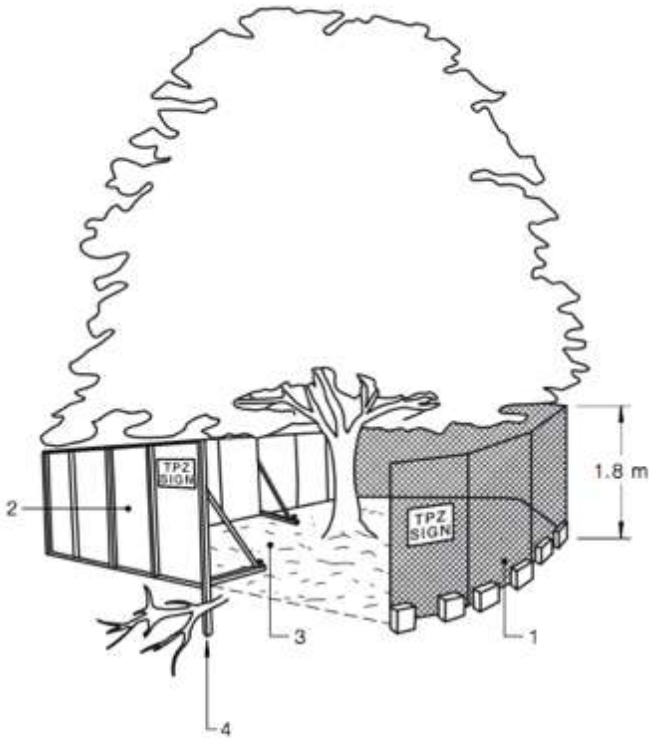

LEGEND:
1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

An image from AS4970-2009,[9] with example tree protection.

[9] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.

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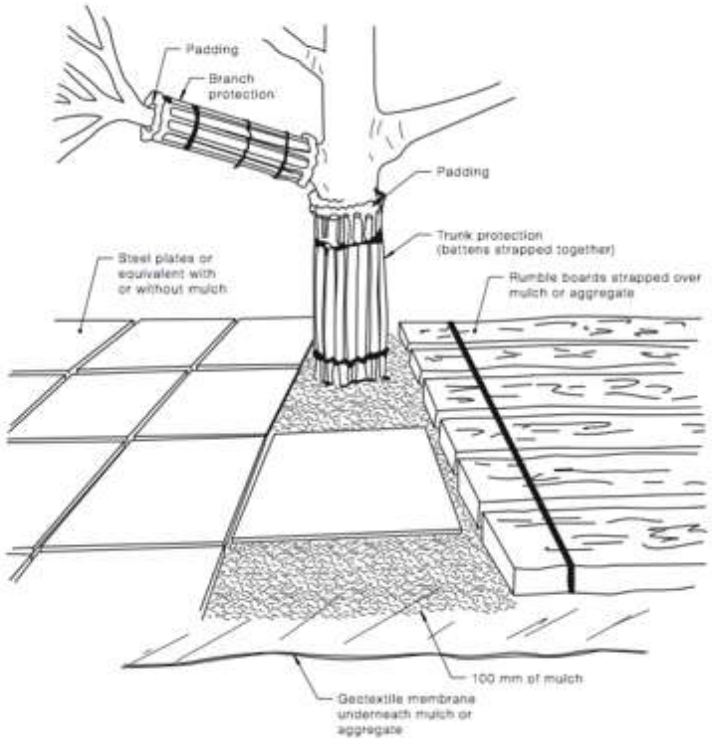

An image from AS4970-2009,[10] with example tree protection.

12.7 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refuelling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

[10] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

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12.8 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the 'top down, pull back' method.

12.9 **Excavations:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 30mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[11] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

12.10 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

12.11 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

12.12 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

[11] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

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13. CONSTRUCTION HOLD POINTS FOR TREE PROTECTION

13.1 **Hold Points:** Below is a sequence of hold points requiring project Arborist certification throughout the development process**.** It provides a list of hold points that must be checked and certified. All certification must be provided in written format upon completion of the development. The final certification must include details of any instructions for remediation undertaken during the development. The principle contractor should be responsible for implemented all tree protection requirements.

Hold Point	Stage	Date Completed and Signature of Project Arborist Responsible
Project Arborist to hold pre construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise. Project Arborist to mark all trees approved for removal.	Prior to development work commencing	
Project Arborist to assess and certify that tree protection has been installed in accordance with AS4970-2009 prior to works commencing at site.	Prior to development work commencing.	
In accordance with AS4970-2009 the project arborist should carryout regular site inspections to ensure works are carried out in accordance with the recommendations. Site inspection are recommended on a monthly frequency.	On-going throughout the development	
The removal of existing structures inside the TPZ of any tree to be retained, such as the existing buildings and hard surfaces must be supervised by the project Arborist.	Demolition	
Project Arborist to supervise all manual excavations and root pruning inside the TPZ of any tree to be retained. Project Arborist to approve all pruning of roots greater than 30mm inside TPZ. All root pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3.	Construction	
Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009.	Construction	
Project Arborist to approve relocation of tree protection for landscaping. All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimise the impact to trees.	Construction/ Landscape	
After all demolition, construction and landscaping works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.	Upon completion of development	

URBAN ARBOR
The Trusted Name in Tree Management

14. BIBLIOGRAPHY/REFERENCES

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15. LIST OF APPENDICES

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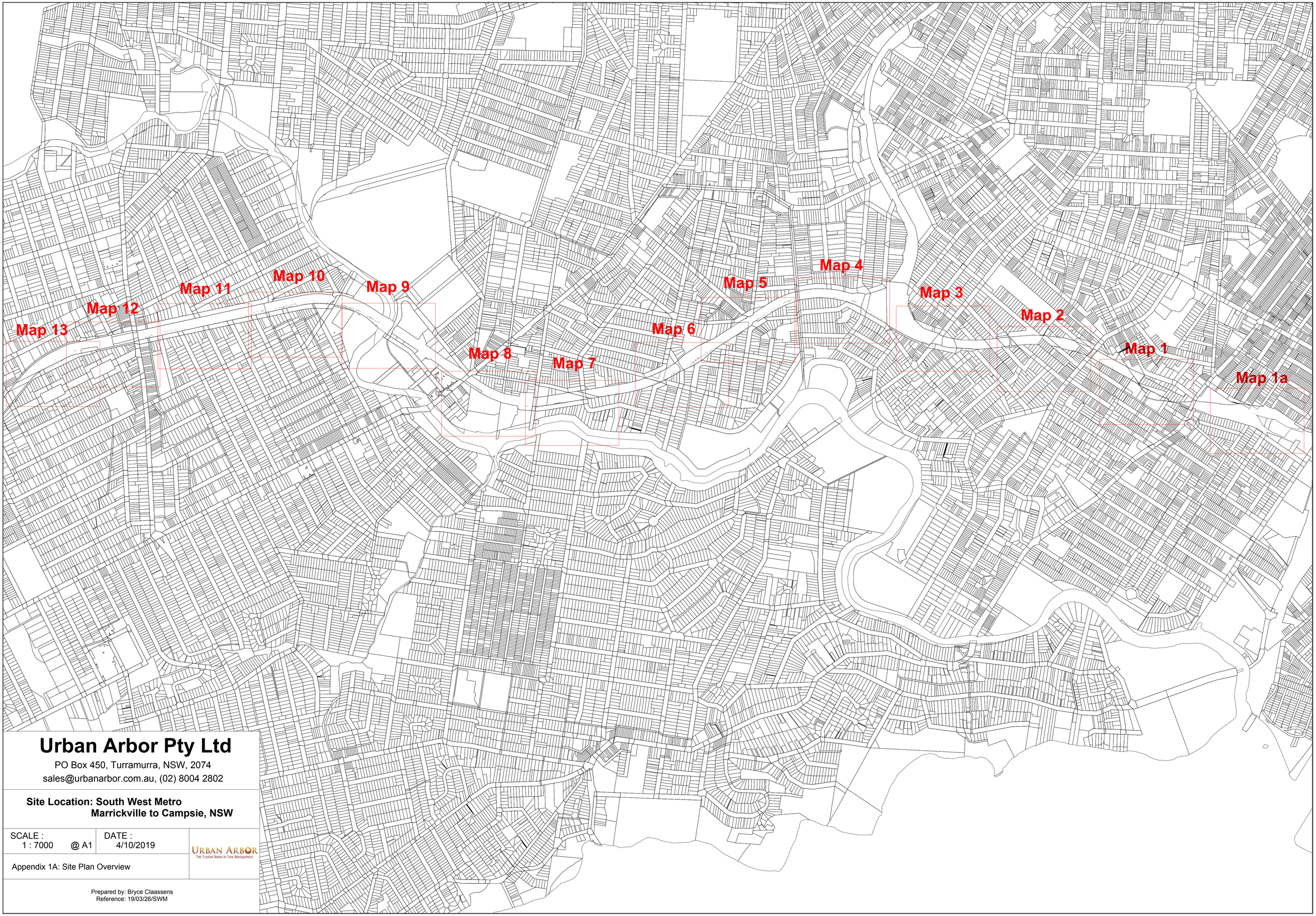
Appendix 1B1 – Map 1a
Appendix 1C – Map 2
Appendix 1D – Map 3
Appendix 1E – Map 4
Appendix 1F – Map 5
Appendix 1G – Map 6
Appendix 1H – Map 7
Appendix 1I – Map 8
Appendix 1J – Map 9
Appendix 1K – Map 10
Appendix 1L – Map 11
Appendix 1M – Map 12
Appendix 1N – Map 13
Appendix 1O – Map 14
Appendix 2 - Tree inspection schedule
Appendix 3 - Definition of Methodology

Bryce Claassens
Diploma of Arboriculture (AQF5)
Cert III Landscape Construction
Member Arboriculture Australia
QTRA Registered User



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Site Location: South West Metro
Marrickville to Campsie, NSW

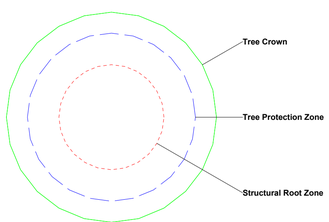
SCALE :	DATE :
1 : 7000 @ A1	4/10/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1A: Site Plan Overview

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend



0 80m

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SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
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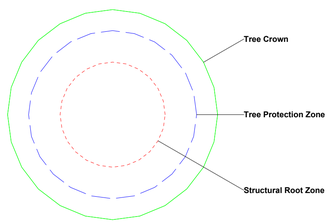
Appendix 1B: Map 1

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

1f
1e
1d
1c
G1a
1b
1a

Tree Legend



0 80m

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Site Location: South West Metro
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SCALE : 1 : 500 @ A1

DATE : 10/04/2019

URBAN ARBOR
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Appendix 1B1: Map 1A

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend

0 80m

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SCALE :	DATE :
1 : 500 @ A1	4/10/2019

URBAN ARBOR
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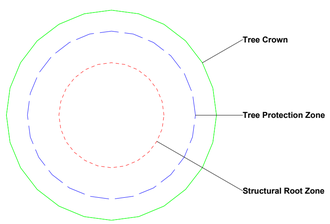
Appendix 1C: Map 2

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend



0 80m

92 91 90 89 88 87 86

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1 : 500 @ A1	3/26/2019

URBAN ARBOR
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Appendix 1D: Map 3

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend

Tree Crown

Tree Protection Zone

Structural Root Zone

0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE : 1 : 500 @ A1

DATE : 3/26/2019

URBAN ARBOR
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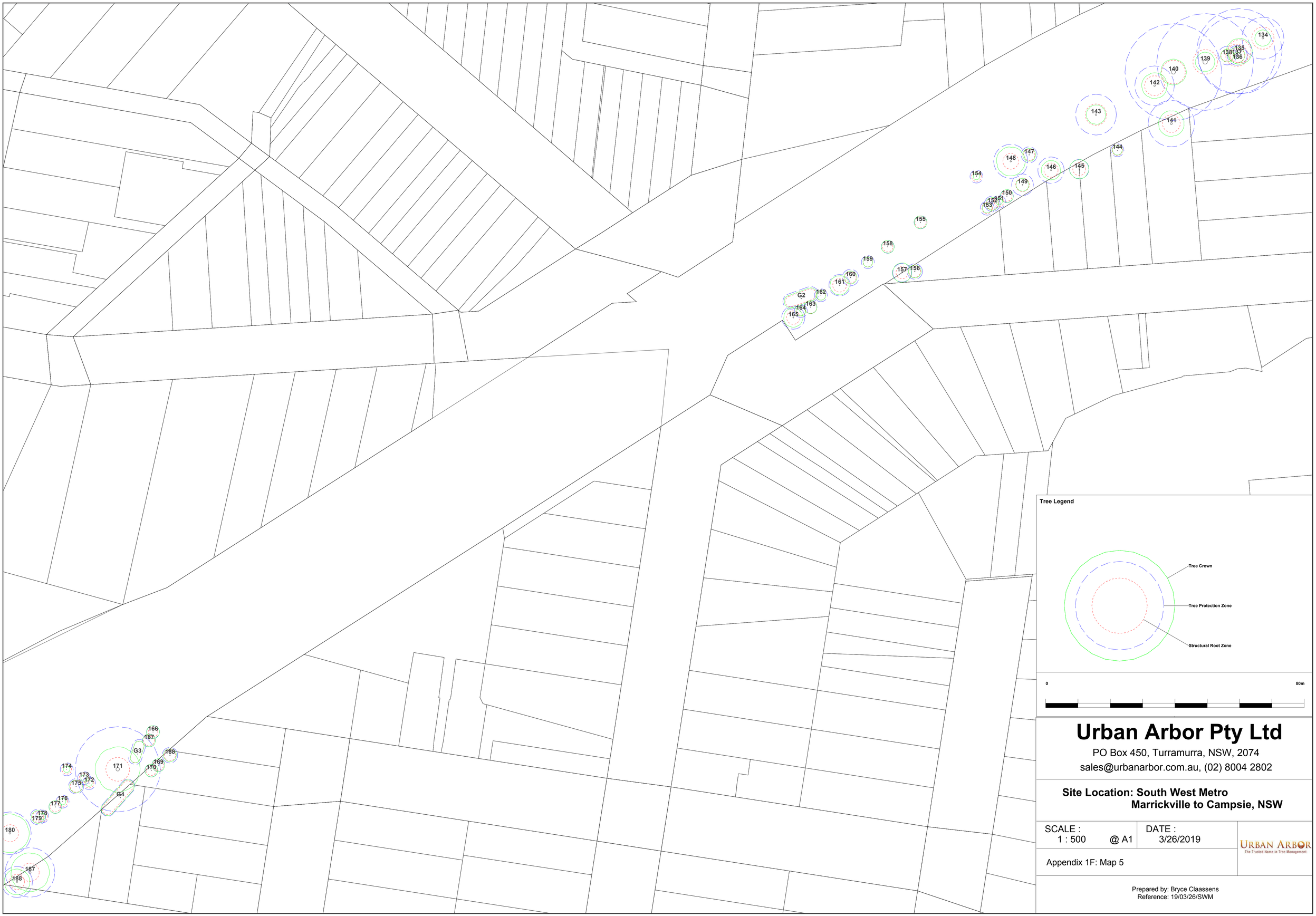
Appendix 1E: Map 4

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM



Tree Legend

0 80m

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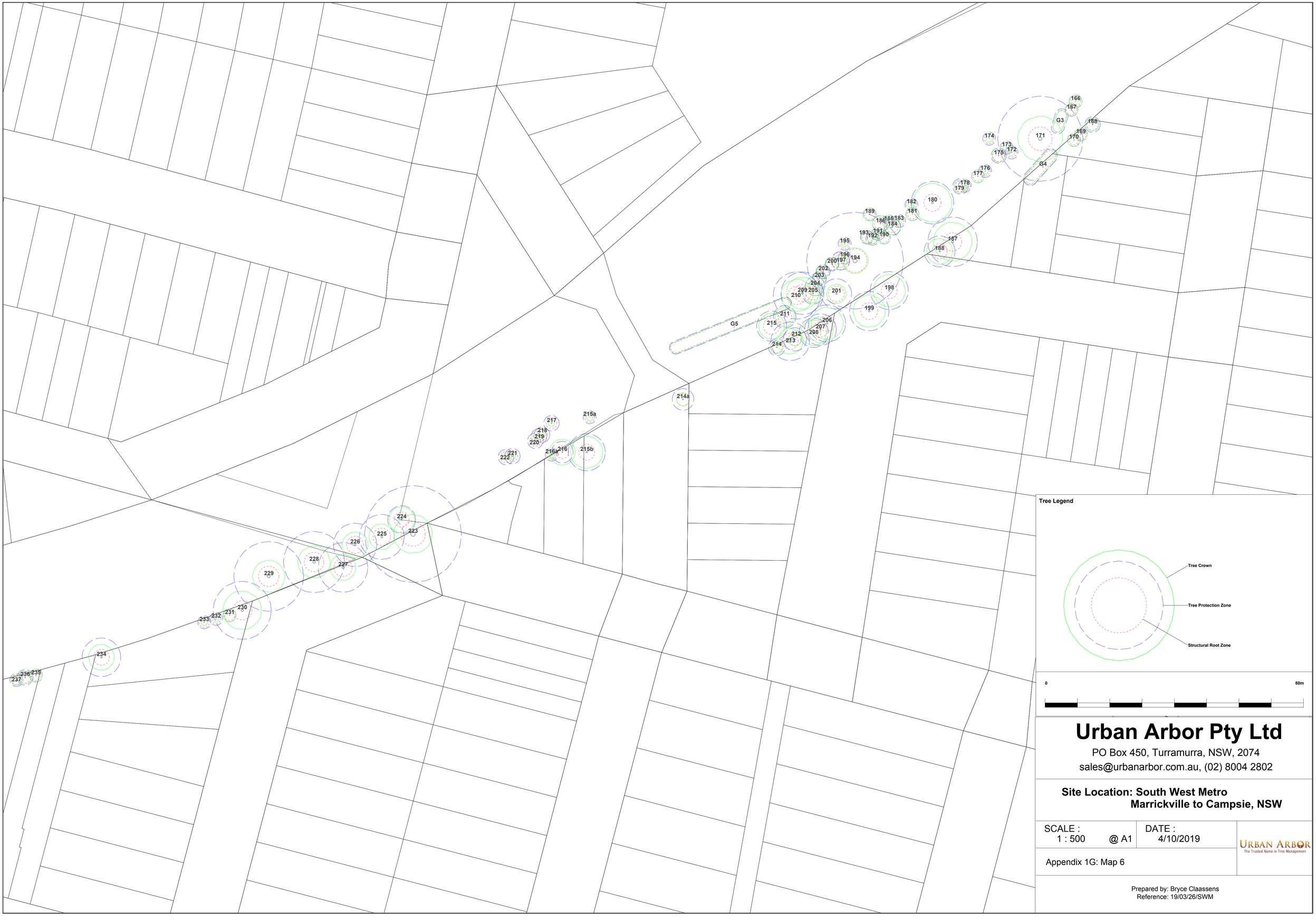
Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1F: Map 5

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM



Tree Legend

0 80m

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SCALE :	DATE :
1 : 500 @ A1	4/10/2019

URBAN ARBOR
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Appendix 1G: Map 6

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend

0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	4/10/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1H: Map 7

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

316
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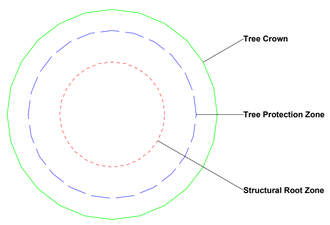
Tree Legend



0 80m

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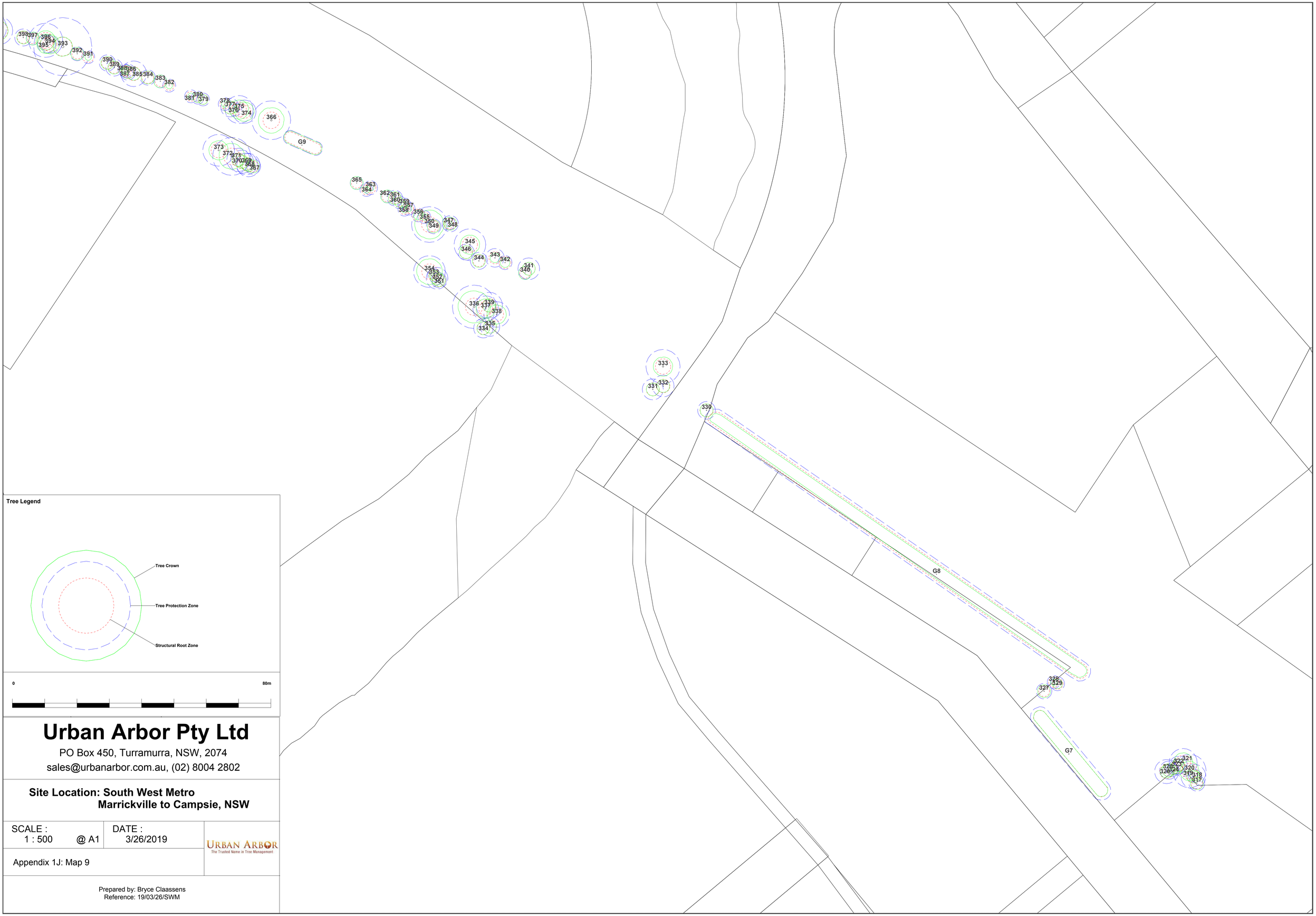
Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1I: Map 8

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM



Tree Legend

0 80m

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Site Location: South West Metro
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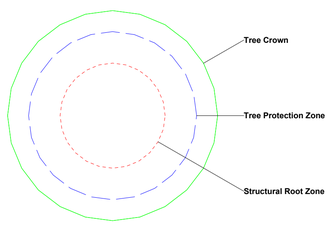
SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1J: Map 9

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend



0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
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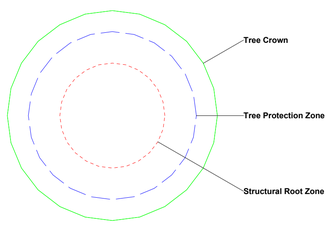
Appendix 1K: Map 10

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend



0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1L: Map 11

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend

0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

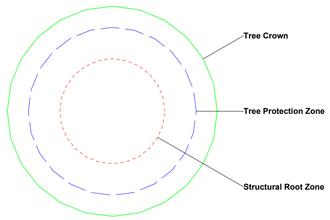
SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1M: Map 12

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

Tree Legend



0 80m

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Site Location: South West Metro
Marrickville to Campsie, NSW

SCALE :	DATE :
1 : 500 @ A1	3/26/2019

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1N: Map 13

Prepared by: Bryce Claassens
Reference: 19/03/26/SWM

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Tree Legend

Tree Crown

Tree Protection Zone

Structural Root Zone

0 40m

Urban Arbor Pty Ltd

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Site Location: South West Metro, Marrickville to Campsie, NSW.

SCALE : 1 : 250 @ A1	DATE : 17/09/2020	URBAN ARBOR The Trusted Name in Tree Management

Appendix 1O: Map 14

Prepared by: Bryce Claassens

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
1	Lemon Scented Gum	*Corymbia citriodora*	Mature	18	6	720					720	800	Good	Good	High	1. Long	A1	8.6	3.0	Canopy extends into corridoor.
1a	Tree of Heaven	*Ailanthus altissima*	Mature	8	3	220	230				318	450	Fair	Fair	Low	2. Medium	Z3	3.8	2.4	Located within corridor. Exempt species.
1b	Chinese Hackberry	*Celtis sinensis*	Young	3	1	50					50	60	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species. Not a tree as defined in scope - captured as vegetation.
1c	River She Oak	*Casuarina cunninghamiana*	Young	6	1	100					100	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
1d	Lantana	*Lantana camara*	Semi-mature	2	1	150					150	200	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.7	Located within corridor. Weed species. Not a tree as defined in scope - captured as vegetation.
1e	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	3.5	1.5	100	100				141	180	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.6	Located within corridor. Exempt species.
1f	River She Oak	*Casuarina cunninghamiana*	Mature	10	4	440					440	480	Good	Good	Medium	1. Long	A1	5.3	2.4	Located within corridor.
2	Blueberry Ash	*Elaeocarpus reticulatus*	Mature	7	1.5	150					150	190	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridoor.
3	Blueberry Ash	*Elaeocarpus reticulatus*	Mature	7	1.5	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridoor.
4	Blueberry Ash	*Elaeocarpus reticulatus*	Mature	7	1.5	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridoor.
5	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	4	2	210	130				247	440	Fair	Fair	Medium	2. Medium	A2	3.0	2.3	Low foliage density for species. Canopy extends into corridor.
6	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	5	1.5	120	140				184	230	Fair	Fair	Medium	2. Medium	A2	2.2	1.8	Low foliage density for species. Canopy extends into corridor.
7	Lemon Scented Tea Tree	*Leptospermum petersonii*	Dead	5	1	180					180	200	Dead	Poor	Low	4. Remove	Z4	2.2	1.7	Dead tree.
8	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	5	2	230	120				259	450	Good	Good	Medium	1. Long	A1	3.1	2.4	Canopy extends into corridor.
9	Brown Pine	*Podocarpus elatus*	Mature	10	4	650					650	680	Good	Good	Medium	1. Long	A1	7.8	2.8	Co-dominant stems at 1m.
10	Lemon Scented Gum	*Corymbia citriodora*	Mature	17	5	830					830	900	Good	Good	High	1. Long	A1	10.0	3.2	Canopy extends into corridor.
11	Silky Oak	*Grevillea robusta*	Mature	11	3	380					380	440	Good	Fair	Medium	2. Medium	A1	4.6	2.3	Growing through canopy of adjacent tree. Canopy extends into corridor.
12	Brown Pine	*Podocarpus elatus*	Mature	10	4	680					680	740	Good	Good	High	1. Long	A1	8.2	2.9	Co-dominant stems at 1m.
13	Sydney Blue Gum	*Eucalyptus saligna*	Semi-mature	14	2	290					290	300	Good	Good	Medium	1. Long	A1	3.5	2.0	Canopy extends into corridor.
14	Sydney Blue Gum	*Eucalyptus saligna*	Semi-mature	14	2	270					270	290	Good	Good	Medium	1. Long	A1	3.2	2.0	Canopy extends into corridor.
15	Sydney Blue Gum	*Eucalyptus saligna*	Semi-mature	14	4	410					410	450	Good	Good	Medium	1. Long	A1	4.9	2.4	Canopy extends into corridor.
16	Illawara Flame	*Brachychiton acerifolius*	Semi-mature	8.5	2	250					250	290	Good	Good	Medium	1. Long	A1	3.0	2.0	Canopy extends into corridor.
17	Sydney Blue Gum	*Eucalyptus saligna*	Mature	18	4	450					450	480	Good	Good	High	1. Long	A1	5.4	2.4	Canopy extends into corridor.
18	Swamp Mahogany	*Eucalyptus robusta*	Mature	13	4	460					460	480	Good	Good	High	1. Long	A1	5.5	2.4	Canopy extends into corridor.
19	Swamp Oak	*Casuarina glauca*	Mature	13	2	250					250	270	Good	Good	Medium	1. Long	A1	3.0	1.9	Trunk lean. Canopy extends into corridor.
20	Swamp Oak	*Casuarina glauca*	Mature	12	2	250					250	280	Good	Good	Medium	1. Long	A1	3.0	1.9	Canopy within park only.
21	Swamp Oak	*Casuarina glauca*	Mature	13	3	300					300	350	Good	Good	Medium	1. Long	A1	3.6	2.1	Canopy extends into corridor.
22	Swamp Oak	*Casuarina glauca*	Mature	12	2	230					230	260	Good	Good	Medium	1. Long	A1	2.8	1.9	Canopy within park only.
23	Swamp Oak	*Casuarina glauca*	Mature	9	2	210					210	240	Good	Good	Medium	1. Long	A1	2.5	1.8	Canopy extends into corridor.
24	Swamp Oak	*Casuarina glauca*	Mature	12	2	240	160	100			305	400	Good	Fair	Medium	3. Short	Z9	3.7	2.3	Co-dominant stems with partial failure of stem in direction of corridor.
25	Swamp Oak	*Casuarina glauca*	Mature	16	2.5	340					340	360	Good	Fair	Medium	2. Medium	A1	4.1	2.2	Co-dominant stems at 7m with bark inclusion.
26	Swamp Oak	*Casuarina glauca*	Mature	14	2	330					330	340	Good	Good	Medium	1. Long	A1	4.0	2.1	Canopy extends into corridor.
27	Swamp Oak	*Casuarina glauca*	Semi-mature	8	1.5	180					180	190	Good	Fair	Medium	2. Medium	A1	2.2	1.6	Suppressed by adjacent trees. Canopy extends into corridor.
28	Swamp Oak	*Casuarina glauca*	Mature	12	1.5	210					210	220	Good	Good	Medium	1. Long	A1	2.5	1.8	Canopy within park only.
29	Swamp Oak	*Casuarina glauca*	Mature	12	3	280					280	310	Good	Good	Medium	1. Long	A1	3.4	2.0	Canopy within park only.
30	Swamp Oak	*Casuarina glauca*	Mature	9	2	270					270	290	Good	Good	Medium	1. Long	A1	3.2	2.0	Canopy extends into corridor.
31	Swamp Oak	*Casuarina glauca*	Mature	14	3	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Upper canopy extends into corridor.
32	Swamp Oak	*Casuarina glauca*	Mature	10	3	310					310	340	Good	Good	Medium	1. Long	A1	3.7	2.1	Canopy extends into corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
33	Swamp Oak	*Casuarina glauca*	Mature	14	2	230					230	250	Good	Good	Medium	1. Long	A1	2.8	1.8	Canopy extends into corridor.
34	Swamp Oak	*Casuarina glauca*	Semi-mature	13	2	220					220	240	Good	Good	Medium	1. Long	A1	2.6	1.8	Canopy within park only.
35	Swamp Oak	*Casuarina glauca*	Semi-mature	9	2	180					180	200	Good	Good	Medium	1. Long	A1	2.2	1.7	Canopy extends into corridor.
36	Swamp Mahogany	*Eucalyptus robusta*	Semi-mature	13	2	210					210	230	Good	Good	Medium	1. Long	A1	2.5	1.8	Canopy within park only.
37	Swamp Mahogany	*Eucalyptus robusta*	Mature	11	4	410					410	440	Good	Good	High	1. Long	A1	4.9	2.3	Canopy extends into corridor.
38	Swamp Oak	*Casuarina glauca*	Mature	16	5	570					570	620	Good	Good	High	1. Long	A1	6.8	2.7	Branch failure to the south west. Canopy extends into corridor.
39	Sydney Blue Gum	*Eucalyptus saligna*	Mature	21	6	720					720	790	Good	Good	High	1. Long	A1	8.6	3.0	Old failure of central leader at 10m. New growth appears to be well attached. Canopy extends into corridor.
40	Swamp Mahogany	*Eucalyptus robusta*	Mature	9	3	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Canopy extends into corridor.
41	Swamp Mahogany	*Eucalyptus robusta*	Mature	11	4	340					340	440	Good	Good	Medium	1. Long	A1	4.1	2.3	Canopy within park only.
42	Swamp Oak	*Casuarina glauca*	Mature	13	3	340					340	380	Good	Good	Medium	1. Long	A1	4.1	2.2	Canopy extends into corridor.
43	Swamp Mahogany	*Eucalyptus robusta*	Semi-mature	15	3	210					210	230	Good	Good	Medium	1. Long	A1	2.5	1.8	Asymmetric crown shape, within park only.
44	Swamp Oak	*Casuarina glauca*	Semi-mature	10	1.5	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy within park only.
45	Swamp Oak	*Casuarina glauca*	Semi-mature	11	2	170					170	190	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy within park only.
46	Queensland Brushbox	*Lophostemon confertus*	Mature	12	5	680					680	740	Good	Good	High	1. Long	A1	8.2	2.9	Canopy extends into corridor.
47	Swamp Oak	*Casuarina glauca*	Mature	15	2	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Canopy within park only.
48	Swamp Oak	*Casuarina glauca*	Mature	14	2	230					230	250	Good	Good	Medium	1. Long	A1	2.8	1.8	Canopy within park only.
49	Swamp Oak	*Casuarina glauca*	Mature	14	3	380					380	400	Good	Good	Medium	1. Long	A1	4.6	2.3	Canopy extends into corridor.
50	Swamp Oak	*Casuarina glauca*	Mature	14	2	280					280	320	Good	Good	Medium	1. Long	A1	3.4	2.1	Canopy within park only.
51	Swamp Oak	*Casuarina glauca*	Mature	14	2	240					240	280	Good	Good	Medium	1. Long	A1	2.9	1.9	Canopy within park only.
52	Swamp Mahogany	*Eucalyptus robusta*	Semi-mature	9	4	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Canopy extends into corridor.
53	Swamp Oak	*Casuarina glauca*	Mature	10	2	220					220	240	Good	Good	Medium	1. Long	A1	2.6	1.8	Canopy within park only.
54	Swamp Oak	*Casuarina glauca*	Mature	17	4	460					460	490	Good	Good	High	1. Long	A1	5.5	2.5	Canopy extends into corridor.
55	Swamp Mahogany	*Eucalyptus robusta*	Semi-mature	13	2	180					180	200	Good	Good	Medium	1. Long	A1	2.2	1.7	Canopy within park only.
56	Swamp Mahogany	*Eucalyptus robusta*	Mature	12	5	330					330	380	Good	Good	High	1. Long	A1	4.0	2.2	Canopy within park only.
57	Coastal Banksia	*Banksia integrefolia*	Semi-mature	7	2	200					200	220	Good	Good	Low	1. Long	A1	2.4	1.8	Canopy extends into corridor.
58	Swamp Mahogany	*Eucalyptus robusta*	Mature	18	5	490					490	530	Good	Good	High	1. Long	A1	5.9	2.5	Canopy extends into corridor.
59	Swamp Oak	*Casuarina glauca*	Mature	15	3	350					350	380	Good	Good	High	1. Long	A1	4.2	2.2	Canopy within park only.
60	Queensland Brushbox	*Lophostemon confertus*	Mature	17	5	570					570	600	Good	Good	High	1. Long	A1	6.8	2.7	Canopy extends into corridor.
61	Swamp Oak	*Casuarina glauca*	Mature	12	3	310					310	330	Good	Good	Medium	1. Long	A1	3.7	2.1	Canopy within park only.
62	Swamp Oak	*Casuarina glauca*	Semi-mature	9	2	220					220	240	Good	Good	Medium	1. Long	A1	2.6	1.8	Canopy within park only.
63	Swamp Oak	*Casuarina glauca*	Mature	13	5	520					520	550	Good	Good	High	1. Long	A1	6.2	2.6	Canopy pruned towards corridor.
64	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Semi-mature	5	1.5	120					120	150	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
65	Swamp Oak	*Casuarina glauca*	Mature	10	3	150	250				292	400	Good	Good	Medium	1. Long	A1	3.5	2.3	Canopy extends into corridor.
66	Swamp Oak	*Casuarina glauca*	Semi-mature	10	2	180					180	200	Good	Good	Medium	1. Long	A1	2.2	1.7	Canopy extends into corridor.
67	Swamp Oak	*Casuarina glauca*	Mature	12	2	220					220	240	Good	Good	Medium	1. Long	A1	2.6	1.8	Canopy within park only.
68	Swamp Oak	*Casuarina glauca*	Mature	13	3	380					380	100	Good	Good	Medium	1. Long	A1	4.6	1.5	Canopy extends into corridor.
69	Swamp Oak	*Casuarina glauca*	Mature	13	3	310					310	340	Good	Good	Medium	1. Long	A1	3.7	2.1	Canopy within park only.
70	Avacado	*Persea gratissima*	Mature	11	3.5	320					320	360	Good	Good	Medium	1. Long	A1	3.8	2.2	Located within corridor.
71	Wallangarra White Gum	*Eucalyptus scoparia*	Mature	20	6	550					550	600	Good	Good	High	1. Long	A1	6.6	2.7	DBH estimated. Upper canopy extends into corridor.
72	Forest Oak	*Allocasuaruna torulosa*	Mature	7	2	150	150	100			235	350	Good	Good	Medium	1. Long	A1	2.8	2.1	Canopy extends into corridor.
73	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	10	3	210	180				277	290	Good	Good	Medium	1. Long	A1	3.3	2.0	Located within corridor.
74	Common Oak	*Quercus robur*	Mature	8	4	450					450	470	Good	Fair	Medium	2. Medium	A2	5.4	2.4	Located within corridor. Pruned for power line clearance.
75	Coral	*Erythrina crista-galli*	Mature	8	4	400					400	440	Good	Fair	Low	2. Medium	Z3	4.8	2.3	Located within corridor. Pruned for power lines. Exempt species.
76	Tree of Heaven	*Ailanthus altissima*	Mature	5	2	240					240	280	Good	Fair	Low	5. Small/Young	Z1	2.9	1.9	Located within corridor. Cavity near base.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
G1	Bamboo	*Bambusa spp*	Semi-mature	2	1	100					100	NA	Good	Good	Very Low	5. Small/Young	Z1	2.0	NA	Group of bamboo. Not a tree as defined in scope - captured as vegetation.
G1a	Mixed Species	*Mixed spp*	Semi-mature	3	1.5	100					100	120	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Group of mixed weed species including lantana, camphor and hackberry. Approximately 20 individuals. Not a tree as defined in scope - captured as vegetation.
77	Norfolk Island Pine	*Araucaria heterophylla*	Mature	20	4	500					500	550	Good	Good	High	1. Long	A1	6.0	2.6	Canopy extends into corridor.
78	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	9	4	450					450	480	Good	Good	Medium	1. Long	A1	5.4	2.4	Canopy extends into corridor.
79	Crepe Myrtle	*Lagerstroemia indica*	Mature	5	2.5	250					250	250	Good	Good	Medium	1. Long	A1	3.0	1.8	Canopy extends into corridor.
80	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2.5	250					250	250	Good	Good	Medium	1. Long	A1	3.0	1.8	Suppressed by adjacent tree. Canopy extends into corridor.
80a	Camphor Laurel	*Cinnamomum camphora*	Mature	11	9	1300					1300	1450	Good	Good	Medium	1. Long	A1	15.0	3.9	Located on nature strip.
80b	Camphor Laurel	*Cinnamomum camphora*	Mature	10	5	550					550	580	Good	Fair	Medium	1. Long	A1	6.6	2.6	Located on nature strip. Pruned for power lines.
80c	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	450					450	480	Good	Fair	Medium	2. Medium	A1	5.4	2.4	Located on nature strip. Pruned for power lines.
80d	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	460					460	480	Good	Good	Medium	2. Medium	A1	5.5	2.4	Located on nature strip. Pruned for power lines.
80e	Camphor Laurel	*Cinnamomum camphora*	Mature	10	3	320	280				425	500	Good	Fair	Medium	2. Medium	A1	5.1	2.5	Located on nature strip. Co-dominant stems with cavity in union.
80f	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	480					480	520	Good	Good	Medium	1. Long	A1	5.8	2.5	Located on nature strip.
80g	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	460					460	480	Good	Good	Medium	1. Long	A1	5.5	2.4	Located on nature strip.
80h	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	510					510	530	Good	Good	Medium	1. Long	A1	6.1	2.5	Located on nature strip.
80i	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	480					480	510	Good	Good	Medium	1. Long	A1	5.8	2.5	Located on nature strip.
80j	Evergreen Alder	*Alnus jorulensis*	Mature	8	2	220	150				266	340	Fair	Fair	Medium	2. Medium	A2	3.2	2.1	Located on nature strip. Low foliage density.
80k	Evergreen Alder	*Alnus jorulensis*	Mature	9	4	390					390	410	Fair	Good	Medium	2. Medium	A2	4.7	2.3	Located on nature strip. Low foliage density for species.
80l	Water Gum	*Tristaniopsis laurina*	Semi-mature	6	1.5	100	160				189	220	Good	Fair	Medium	2. Medium	A1	2.3	1.8	Located on nature strip. Co-dominant stems with tight union.
80m	Black Tea-tree	*Melaleuca bracteata*	Mature	7	2.5	420					420	440	Good	Good	Medium	1. Long	A1	5.0	2.3	Located on nature strip.
81	Unknown	*Unknown spp*	Dead	4	1	150					150	150	Dead	Poor	Very Low	4. Remove	Z4	2.0	1.5	Dead tree. Branch extends into corridor.
81a	Tibouchina	*Tibouchina spp*	Young	3	1	80					80	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
81b	Camellia	*Camellia spp*	Semi-mature	2	0.5	100					100	150	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
81c	Mango	*Mangifera indica*	Young	3	1	150					150	150	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
82	Weeping Fig	*Ficus benjamina*	Semi-mature	6	2	250					250	250	Good	Good	Low	5. Small/Young	Z1	3.0	1.8	Canopy extends into corridor.
82a	Turpentine	*Syncarpia glomulifera*	Young	4	1	90					90	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located adjacent to council footpath area.
82b	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	11	4.5	460					460	500	Good	Good	High	1. Long	A1	5.5	2.5	Located in adjoining property. Canopy extends into council footpath area.
82c	Black Peppermint	*Eucalyptus nicholii*	Mature	6	4	280	250				375	480	Good	Good	Medium	1. Long	A1	4.5	2.4	Located in adjoining property. Canopy extends into council footpath area.
82d	Snow In Summer	*Melaleuca linarifolia*	Young	3	0.5	110					110	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Not a tree as defined in scope - captured as vegetation.
82e	Narrow Leaved Bottlebrush	*Callistemone linearis*	Young	2	0.5	90					90	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Not a tree as defined in scope - captured as vegetation.
83	Camphor Laurel	*Cinnamomum camphora*	Mature	10	3.5	190	250	300			434	500	Good	Fair	Medium	1. Long	A1	5.2	2.5	Located in corridor.
84	Silky Oak	*Grevillea robusta*	Mature	9.5	4	400					400	550	Good	Fair	Medium	3. Short	Z9	4.8	2.6	Significant cavity at base of tree. Located in corridor.
85	Silky Oak	*Grevillea robusta*	Mature	14	4	750					750	900	Good	Fair	Medium	3. Short	Z9	9.0	3.2	Located in corridor. Significant cavity at base. Pruned for power lines.
86	Peppercorn Tree	*Schinus molle*	Mature	15	9	1200					1200	1300	Good	Good	High	1. Long	A1	14.4	3.7	Canopy extends into corridor.
87	Camphor Laurel	*Cinnamomum camphora*	Mature	10	5	1500					1500	1500	Good	Good	Medium	1. Long	A1	15.0	3.9	Located within corridor. Multi stem tree DBH estimated.
88	Camphor Laurel	*Cinnamomum camphora*	Mature	10	4	1400					1400	1400	Good	Fair	Medium	2. Medium	A1	15.0	3.8	Cavity at base. Located within corridor.
89	Camphor Laurel	*Cinnamomum camphora*	Mature	10	5	1200					1200	1200	Good	Good	Medium	1. Long	A1	14.4	3.6	Located within corridor.
90	Queensland Brushbox	*Lophostemon confertus*	Semi-mature	9	3	440					440	440	Good	Good	Medium	1. Long	A1	5.3	2.3	Located within corridor.
91	Queensland Brushbox	*Lophostemon confertus*	Mature	9	4	350	300				461	500	Good	Good	Medium	1. Long	A1	5.5	2.5	Located within corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
92	Queensland Brushbox	*Lophostemon confertus*	Mature	8	4	250	300				391	480	Good	Good	Medium	1. Long	A1	4.7	2.4	Located within corridor on top of rocky slope. Under power lines.
93	London Plane	*Platanus x hispanica*	Mature	21	8	1100					1100	1200	Good	Fair	High	2. Medium	A1	13.2	3.6	Located within corridor. Asymmetric crown shape due to power line clearance. Suckers at base.
94	London Plane	*Platanus x hispanica*	Mature	22	8	1200					1200	1300	Good	Fair	High	2. Medium	A1	14.4	3.7	Located within corridor. Asymmetric crown shape due to power line clearance.
95	London Plane	*Platanus x hispanica*	Mature	21	8	1200					1200	1250	Good	Fair	High	2. Medium	A1	14.4	3.6	Located within corridor. Asymmetric crown shape due to power line clearance.
96	London Plane	*Platanus x hispanica*	Mature	21	6	1250					1250	1300	Good	Fair	High	2. Medium	A1	15.0	3.7	Located within corridor. Asymmetric crown shape due to power line clearance. Suckers at base.
97	London Plane	*Platanus x hispanica*	Mature	21	7	1180					1180	1360	Good	Fair	High	2. Medium	A1	14.2	3.8	Located within corridor. Asymmetric crown shape due to power line clearance.
98	London Plane	*Platanus x hispanica*	Mature	21	6	850					850	1250	Good	Fair	High	2. Medium	A1	10.2	3.6	Located within corridor. Asymmetric crown shape due to power line clearance.
99	London Plane	*Platanus x hispanica*	Mature	21	6	840					840	910	Good	Fair	High	2. Medium	A1	10.1	3.2	Located within corridor. Asymmetric crown shape due to power line clearance.
100	London Plane	*Platanus x hispanica*	Mature	21	8	960					960	1020	Good	Fair	High	2. Medium	A1	11.5	3.3	Located within corridor. Asymmetric crown shape due to power line clearance.
100a	Queensland Brushbox	*Lophostemon confertus*	Mature	20	5	780					780	800	Good	Good	High	1. Long	A1	9.4	3.0	Canopy extends into corridor.
101	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	5	2	450					450	450	Good	Fair	Low	5. Small/Young	Z1	5.4	2.4	Located within corridor. Multi stem tree DBH measured at base.
102	Camphor Laurel	*Cinnamomum camphora*	Mature	11	5	300	580				653	850	Fair	Fair	Medium	2. Medium	A2	7.8	3.1	Located within corridor. Low foliage density for species with epicormic growth.
103	Camphor Laurel	*Cinnamomum camphora*	Mature	17	5	1100					1100	1400	Good	Fair	Medium	2. Medium	A1	13.2	3.8	Canopy pruned for power lines.
104	Camphor Laurel	*Cinnamomum camphora*	Mature	16	7	800					800	880	Good	Fair	Medium	2. Medium	A1	9.6	3.1	Canopy pruned for power lines.
105	Camphor Laurel	*Cinnamomum camphora*	Mature	16	4	450					450	500	Good	Fair	Medium	2. Medium	A1	5.4	2.5	Canopy pruned for power lines.
106	Camphor Laurel	*Cinnamomum camphora*	Mature	16	6	600					600	680	Good	Fair	Medium	2. Medium	A1	7.2	2.8	Canopy pruned for power lines. Cavity at base with bee hive.
107	Parramatta Wattle	*Acacia parramattensis*	Mature	7	3	280					280	300	Good	Good	Medium	2. Medium	A1	3.4	2.0	Located within corridor.
108	Parramatta Wattle	*Acacia parramattensis*	Mature	8	2	200	160				256	330	Good	Good	Medium	2. Medium	A1	3.1	2.1	Located within corridor.
109	Parramatta Wattle	*Acacia parramattensis*	Mature	9	2	200					200	220	Good	Good	Medium	2. Medium	A1	2.4	1.8	Located within corridor.
110	Parramatta Wattle	*Acacia parramattensis*	Mature	8	2	180	120				216	220	Good	Good	Medium	2. Medium	A1	2.6	1.8	Located within corridor.
111	Parramatta Wattle	*Acacia parramattensis*	Mature	7	1	150	150				212	280	Fair	Fair	Low	3. Short	Z4	2.5	1.9	Located within corridor. South stem lopped.
112	Parramatta Wattle	*Acacia parramattensis*	Mature	7	1	170					170	190	Fair	Fair	Low	3. Short	Z4	2.0	1.6	Located within corridor. Low foliage density for species with apical dieback. Early stages of decline.
113	Parramatta Wattle	*Acacia parramattensis*	Semi-mature	5	1	100					100	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
115	Parramatta Wattle	*Acacia parramattensis*	Mature	9	3	180	180				255	350	Good	Fair	Medium	2. Medium	A1	3.1	2.1	Located within corridor. South stem lopped.
116	Parramatta Wattle	*Acacia parramattensis*	Mature	8	3	190					190	210	Fair	Fair	Low	3. Short	Z4	2.3	1.7	Located within corridor. Low foliage density for species with apical dieback. In decline.
117	Black Tea-tree	*Melaleuca bracteata*	Semi-mature	6	2	200					200	220	Good	Good	Medium	1. Long	A1	2.4	1.8	Canopy extends into corridor.
118	Black Tea-tree	*Melaleuca bracteata*	Semi-mature	6	2	180	180				255	300	Good	Good	Medium	1. Long	A1	3.1	2.0	Canopy extends into corridor.
119	White Cedar	*Melia azedarach*	Semi-mature	5	2	190					190	210	Good	Good	Medium	1. Long	A1	2.3	1.7	Canopy extends into corridor.
120	White Cedar	*Melia azedarach*	Semi-mature	5	2	170					170	190	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridor.
121	White Cedar	*Melia azedarach*	Semi-mature	5	2	190					190	210	Good	Good	Medium	1. Long	A1	2.3	1.7	Canopy extends into corridor.
122	Black Tea-tree	*Melaleuca bracteata*	Mature	9	3	300	260				397	440	Good	Good	Medium	1. Long	A1	4.8	2.3	Canopy extends into corridor.
123	Weeping Bottlebrush	*Callistemon viminalis*	Mature	8	2	130	160	180			274	310	Good	Good	Medium	1. Long	A1	3.3	2.0	Canopy extends into corridor.
124	Black Tea-tree	*Melaleuca bracteata*	Mature	9	3	200	230	400			503	460	Good	Good	Medium	1. Long	A1	6.0	2.4	Canopy extends into corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
125	Blueberry Ash	*Elaeocarpus reticulatus*	Young	3	1	60					60	80	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy within nature strip only. Not a tree as defined in scope - captured as vegetation.
126	Blueberry Ash	*Elaeocarpus reticulatus*	Semi-mature	5	1	90	110				142	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy within nature strip only.
127	Honey Myrtle	*Melaleuca bracteata 'Revolution Gold'*	Semi-mature	5	1	150					150	160	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
128	Common Oak	*Quercus robur*	Mature	12	5	600					600	620	Good	Good	Medium	1. Long	A1	7.2	2.7	Located within corridor.
129	Common Oak	*Quercus robur*	Mature	11	5	640					640	650	Good	Good	Medium	1. Long	A1	7.7	2.8	Located within corridor.
130	Tallowood	*Eucalyptus microcorys*	Mature	17	8	980					980	1020	Good	Good	High	1. Long	A1	11.8	3.3	Canopy extends into corridor. Pruned for power lines.
131	Olive	*Olea europaea*	Mature	9.5	4	280	280				396	450	Good	Good	Medium	1. Long	A1	4.8	2.4	Canopy extends into corridor.
132	Tree of Heaven	*Ailanthus altissima*	Mature	8	3	240					240	260	Good	Fair	Low	2. Medium	Z3	2.9	1.9	Exempt species. Canopy extends into corridor.
133	Tree of Heaven	*Ailanthus altissima*	Mature	8	3	250					250	280	Good	Fair	Low	2. Medium	Z3	3.0	1.9	Exempt species. Canopy extends into corridor.
134	Turpentine	*Syncarpia glomulifera*	Mature	5	2.5	250	250	280	300		542	1100	Good	Good	Medium	1. Long	A1	6.5	3.4	Located within corridor.
135	Turpentine	*Syncarpia glomulifera*	Mature	9	4	1100					1100	1200	Good	Good	High	1. Long	A1	13.2	3.6	Located within corridor.
136	Turpentine	*Syncarpia glomulifera*	Mature	5	1	200	160				256	400	Good	Fair	Medium	3. Short	Z9	3.1	2.3	Topped. Located within corridor.
137	Turpentine	*Syncarpia glomulifera*	Mature	9	2.5	1000					1000	1100	Good	Fair	Medium	2. Medium	A1	12.0	3.4	Located within corridor. Pruned for power lines.
138	Turpentine	*Syncarpia glomulifera*	Mature	6	2	240					240	280	Good	Fair	Medium	2. Medium	A1	2.9	1.9	Located within corridor. Pruned for power lines.
139	Turpentine	*Syncarpia glomulifera*	Mature	9	3	1400					1400	1400	Good	Good	High	1. Long	A1	15.0	3.8	Located within corridor. Multi stem tree DBH measured at base.
140	Turpentine	*Syncarpia glomulifera*	Mature	9	4	1300					1300	1300	Good	Good	High	1. Long	A1	15.0	3.7	Located within corridor. Multi stem tree DBH measured at base.
141	Leightons Green	*x Cupressocyparis leylandii*	Mature	8	4	600					600	640	Good	Good	Low	1. Long	Z3	7.2	2.7	Canopy extends into corridor. Exempt species.
142	Turpentine	*Syncarpia glomulifera*	Mature	9	4	320	300	260			510	850	Good	Good	High	1. Long	A1	6.1	3.1	Located within corridor. Pruned for power lines.
143	Turpentine	*Syncarpia glomulifera*	Mature	8	3	250	300	250	250		527	1000	Good	Good	High	1. Long	A1	6.3	3.3	Located within corridor.
144	Crepe Myrtle	*Lagerstroemia indica*	Semi-mature	4	1.5	150					150	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Canopy extends into corridor.
145	Broad Leaved Privet	*Ligustrum lucidum*	Mature	8	3	250					250	300	Good	Fair	Low	2. Medium	Z3	3.0	2.0	Canopy extends into corridor. Exempt species.
146	Silky Oak	*Grevillea robusta*	Mature	9	3	340					340	380	Good	Fair	Medium	3. Short	Z9	4.1	2.2	Located within corridor. Topped for power lines.
147	Olive	*Olea europaea*	Mature	5	2	180	100				206	220	Good	Good	Low	5. Small/Young	Z1	2.5	1.8	Located within corridor.
148	Silky Oak	*Grevillea robusta*	Mature	10	4.5	440					440	480	Fair	Fair	Medium	2. Medium	A2	5.3	2.4	Located within corridor. Low foliage density for species.
149	Olive	*Olea europaea*	Mature	5	2	230	160				280	340	Good	Fair	Low	5. Small/Young	Z1	3.4	2.1	Located within corridor.
150	Firewheel	*Stenocarpus sinuatus*	Mature	5	2	160					160	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
151	Broad Leaved Privet	*Ligustrum lucidum*	Young	4	1	100					100	110	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
152	Avacado	*Persea gratissima*	Mature	4	2	200					200	240	Good	Fair	Low	5. Small/Young	Z1	2.4	1.8	Located within corridor.
153	Loquat	*Eriobotrya japonica*	Mature	4	1.5	180					180	190	Good	Fair	Low	5. Small/Young	Z1	2.2	1.6	Located within corridor.
154	Silky Oak	*Grevillea robusta*	Semi-mature	7	1	110					110	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
155	Silky Oak	*Grevillea robusta*	Semi-mature	7	2	100	110				149	220	Good	Fair	Low	5. Small/Young	Z1	2.0	1.8	Located within corridor.
156	Olive	*Olea europaea*	Mature	7	2	200					200	240	Good	Good	Medium	1. Long	A1	2.4	1.8	Canopy extends into corridor.
157	Mango	*Mangifera indica*	Mature	5	3	240					240	260	Good	Good	Medium	1. Long	A1	2.9	1.9	Canopy extends into corridor.
158	Sweet Pittosporum	*Pittosporum undulatum*	Mature	5	2	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor. Growing on slope.
159	Golden Wreath Wattle	*Acacia saligna*	Semi-mature	4	1.5	80					80	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
160	Golden Wreath Wattle	*Acacia saligna*	Mature	5	2	160		140			213	220	Good	Fair	Low	5. Small/Young	Z1	2.6	1.8	Located within corridor.
161	Sydney Golden Wattle	*Acacia longifolia*	Mature	5	3	200	190				276	350	Fair	Fair	Medium	3. Short	Z9	3.3	2.1	Located within corridor. Branch failure to the north. Low foliage density for species.
162	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	1.5	120					120	140	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
G2	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	9	2	200					200	200	Good	Fair	Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Group of camphor laurel. Exempt species. Approximately 4 trees.
163	Golden Wreath Wattle	*Acacia saligna*	Mature	6	2	160					160	290	Good	Fair	Medium	2. Medium	A1	2.0	2.0	Located within corridor. Cavity in trunk.
164	Golden Wreath Wattle	*Acacia saligna*	Semi-mature	4	1.5	140					140	160	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
165	Sydney Golden Wattle	*Acacia longifolia*	Mature	5	3	300					300	330	Good	Good	Medium	2. Medium	A1	3.6	2.1	Located within corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
166	Common or Black Mulberry	*Morus nigra*	Young	4	2	90					90	100	Good	Fair	Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
167	Common or Black Mulberry	*Morus nigra*	Semi-mature	7	2	160					160	200	Good	Good	Low	5. Small/Young	Z3	2.0	1.7	Located within corridor. Exempt species.
168	Broad Leaved Privet	*Ligustrum lucidum*	Mature	7	2	200					200	220	Good	Fair	Low	2. Medium	Z3	2.4	1.8	Canopy extends into corridor. Exempt species.
169	Rubber Tree	*Ficus elastica*	Semi-mature	6	2	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Canopy extends into corridor.
170	Holly	*Ilex spp*	Mature	5	2	150					150	160	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends slightly into corridor.
G3	Tree of Heaven	*Ailanthus altissima*	Mature	8	1.5	100					100	120	Fair	Fair	Low	3. Short	Z3	2.0	1.5	Located within corridor. Group of trees in decline. Exempt species. Approximately 6 trees.
171	Camphor Laurel	*Cinnamomum camphora*	Mature	17	7	1100					1100	1300	Good	Good	Medium	1. Long	A1	13.2	3.7	Located within corridor.
G4	Dwarf Lilly Pilly	*Acmena smithii var. minor*	Semi-mature	8	2	180					180	190	Good	Good	Medium	1. Long	A1	2.2	1.6	Canopy extends into corridor. Group of acmena smithii var minor. Approximately 7 trees.
172	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	5	1	100					100	120	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
173	Broad Leaved Privet	*Ligustrum lucidum*	Young	4	1	90					90	100	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
174	Chinese Hackberry	*Celtis sinensis*	Semi-mature	4	1	100					100	120	Good	Good	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
175	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	5	2	100	110	130			197	250	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.8	Located within corridor. Exempt species.
176	Broad Leaved Privet	*Ligustrum lucidum*	Young	5	1	100					100	110	Good	Good	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
177	Tree of Heaven	*Ailanthus altissima*	Semi-mature	5	2	90	120				150	160	Fair	Fair	Very Low	3. Short	Z3	2.0	1.5	Located within corridor. Exempt species with low foliage density for species and apical dieback.
178	Tree of Heaven	*Ailanthus altissima*	Semi-mature	6	1	100	110				149	200	Fair	Fair	Very Low	3. Short	Z3	2.0	1.7	Located within corridor. Exempt species in decline.
179	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	8	2	200					200	210	Good	Fair	Low	2. Medium	Z3	2.4	1.7	Located within corridor. Exempt species.
180	Sydney Blue Gum	*Eucalyptus saligna*	Mature	22	6	550					550	600	Good	Fair	High	1. Long	A1	6.6	2.7	Located within corridor. Asymmetric crown shape due to power line clearance.
181	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	6	2	110					110	120	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
182	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	5	1	110	100				149	180	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.6	Located within corridor. Exempt species.
183	Honey Locust	*Gleditsia triacanthos*	Young	5	1	100					100	110	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
184	Robinia	*Robinia pseudoacacia*	Mature	9	2.5	190	100				215	240	Good	Fair	Very Low	2. Medium	Z3	2.6	1.8	Located within corridor. Exempt species.
185	Robinia	*Robinia pseudoacacia*	Semi-mature	8	2	140					140	160	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
186	Robinia	*Robinia pseudoacacia*	Mature	7	2.5	210					210	290	Good	Fair	Very Low	2. Medium	Z3	2.5	2.0	Located within corridor. Weed/vine species at base of trunk. Exempt species
187	Bangalay	*Eucalyptus botryoides*	Mature	20	6	640					640	700	Good	Good	High	2. Medium	A1	7.7	2.8	Canopy extends into corridor. DBH estimated.
188	Willow Bottlebrush	*Callistemon salignus*	Mature	10	4	400					400	440	Good	Good	High	1. Long	A1	4.8	2.3	Canopy extends into corridor. DBH estimated.
189	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	5	2	150					150	180	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.6	Located within corridor. Exempt species.
190	Robinia	*Robinia pseudoacacia*	Semi-mature	6	2	150					150	180	Good	Good	Very Low	2. Medium	Z3	2.0	1.6	Located within corridor. Exempt species.
191	Honey Locust	*Gleditsia triacanthos*	Young	8	1.5	50	100				112	150	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
192	Robinia	*Robinia pseudoacacia*	Semi-mature	9	1.5	170					170	190	Good	Fair	Very Low	2. Medium	Z3	2.0	1.6	Located within corridor. Exempt species.
193	Robinia	*Robinia pseudoacacia*	Semi-mature	8	2	140	100				172	200	Good	Fair	Very Low	2. Medium	Z3	2.1	1.7	Located within corridor. Exempt species.
194	Camphor Laurel	*Cinnamomum camphora*	Mature	17	4	1300					1300	1300	Good	Fair	Medium	2. Medium	A1	15.0	3.7	Located within corridor. DBH measured at base.
195	Robinia	*Robinia pseudoacacia*	Semi-mature	6	1	100					100	120	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
196	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	6	1	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Located within corridor.
197	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	8	2	100	100	100	120	110	238	600	Good	Fair	Low	5. Small/Young	Z3	2.9	2.7	Located within corridor. Exempt species. Multi stem tree.
198	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	14	5	390	300				492	500	Good	Good	Medium	1. Long	A1	5.9	2.5	Canopy extends into corridor.
199	Queensland Brushbox	*Lophostemon confertus*	Mature	18	5	510					510	580	Good	Good	High	1. Long	A1	6.1	2.6	Upper canopy extends into corridor.
200	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	8	2	100	110	100			179	250	Good	Fair	Very Low	5. Small/Young	Z3	2.1	1.8	Located within corridor. Exempt species.
201	Robinia	*Robinia pseudoacacia*	Mature	9	3	240	310				392	490	Good	Fair	Very Low	2. Medium	Z3	4.7	2.5	Located within corridor. Exempt species.
202	Robinia	*Robinia pseudoacacia*	Semi-mature	8	2	180					180	200	Good	Fair	Very Low	2. Medium	Z3	2.2	1.7	Located within corridor. Exempt species.
203	Robinia	*Robinia pseudoacacia*	Semi-mature	8	2	180					180	200	Good	Fair	Very Low	2. Medium	Z3	2.2	1.7	Located within corridor. Exempt species.
204	Robinia	*Robinia pseudoacacia*	Mature	10	3	250					250	280	Good	Good	Very Low	2. Medium	Z3	3.0	1.9	Located within corridor. Exempt species.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
205	Robinia	*Robinia pseudoacacia*	Mature	9	3	100	170	200			281	340	Good	Fair	Very Low	2. Medium	Z3	3.4	2.1	Located within corridor. Exempt species.
206	Robinia	*Robinia pseudoacacia*	Mature	13	5	480					480	500	Good	Good	Low	2. Medium	Z3	5.8	2.5	Canopy extends into corridor.
207	Robinia	*Robinia pseudoacacia*	Mature	13	4	410					410	440	Good	Fair	Low	2. Medium	Z3	4.9	2.3	Canopy extends into corridor. Large pruning wound at 1.5m.
208	Robinia	*Robinia pseudoacacia*	Mature	12	4	380					380	400	Good	Good	Low	2. Medium	Z3	4.6	2.3	Canopy extends slightly into corridor.
209	Camphor Laurel	*Cinnamomum camphora*	Mature	18	5	550					550	600	Good	Fair	Medium	2. Medium	Z3	6.6	2.7	Located within corridor. Exempt species. Pruned for power lines.
210	Camphor Laurel	*Cinnamomum camphora*	Mature	18	5	610					610	690	Good	Fair	Medium	2. Medium	Z3	7.3	2.8	Located within corridor. Exempt species. Pruned for power lines.
G5	Robinia	*Robinia pseudoacacia*	Semi-mature	8	2	150					150	180	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.6	Located within corridor. Group of trees on upper embankment. Exempt species. Approximately 30 trees.
G5a	Wattle	*Acacia spp*	Young	3	1	80					80	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Group of wattles. Approximately 5 individuals. Not a tree as defined in scope - captured as vegetation.
211	Camphor Laurel	*Cinnamomum camphora*	Mature	13	3	290					290	340	Good	Good	Medium	1. Long	A1	3.5	2.1	Located within corridor.
212	Hibiscus	*Hibiscus spp*	Mature	5	2	300					300	300	Good	Fair	Low	5. Small/Young	Z1	3.6	2.0	Canopy extends into corridor.
213	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	20	4	500					500	520	Good	Good	High	1. Long	A1	6.0	2.5	Only upper canopy extends into corridor.
214	Weeping Bottlebrush	*Callistemon viminalis*	Mature	6	2	180	120				216	220	Good	Good	Medium	1. Long	A1	2.6	1.8	Canopy extends into corridor.
214a	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	2	200	200				283	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Located within nature strip.
215	Camphor Laurel	*Cinnamomum camphora*	Mature	16	4	280	270				389	550	Good	Fair	Medium	2. Medium	A1	4.7	2.6	Located within corridor.
215a	Lantana	*Lantana camara*	Semi-mature	2	1	80					80	100	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Weed species. Not a tree as defined in scope - captured as vegetation.
215b	Euodia	*Tetradium daniellii*	Mature	15	5	480					480	500	Fair	Good	Medium	2. Medium	A2	5.8	2.5	Located within adjoining property. Canopy extends slightly into corridor.
216	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	15	4	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Canopy extends into corridor.
216a	Illawara Flame	*Brachychiton acerifolius*	Young	4	1	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located in adjoining property. Canopy extends slightly into corridor.
217	Poplar	*Populus spp*	Semi-mature	6	1	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
218	Poplar	*Populus spp*	Semi-mature	5	1	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
219	Poplar	*Populus spp*	Semi-mature	5	1	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
220	Poplar	*Populus spp*	Semi-mature	5	1	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
221	Poplar	*Populus spp*	Semi-mature	5	1	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
222	Poplar	*Populus spp*	Semi-mature	5	1	200					200	200	Good	Fair	Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
223	Indian Coral	*Erythrina x sykesii*	Mature	10	6	1400					1400	1400	Good	Fair	Low	2. Medium	Z3	15.0	3.8	Canopy extends into corridor. Exempt species. DBH measured at base.
224	Queensland Brushbox	*Lophostemon confertus*	Mature	14	4	360					360	430	Good	Fair	Medium	2. Medium	A1	4.3	2.3	Located within corridor. Pruned for power lines.
225	Queensland Brushbox	*Lophostemon confertus*	Mature	14	4	580					580	620	Good	Good	High	1. Long	A1	7.0	2.7	Located within corridor.
226	Queensland Brushbox	*Lophostemon confertus*	Mature	14	4	560					560	590	Good	Good	High	1. Long	A1	6.7	2.7	Located within corridor.
227	Queensland Brushbox	*Lophostemon confertus*	Mature	14	4	640					640	700	Good	Good	High	1. Long	A1	7.7	2.8	Canopy extends slightly into corridor.
228	Queensland Brushbox	*Lophostemon confertus*	Mature	13	5	790					790	820	Good	Good	High	1. Long	A1	9.5	3.0	Located within corridor.
229	Queensland Brushbox	*Lophostemon confertus*	Mature	13	5	900					900	900	Good	Good	High	1. Long	A1	10.8	3.2	Located within corridor.
229a	Black Tea-tree	*Melaleuca bracteata*	Mature	9.5	3.5	320					320	330	Good	Good	Medium	1. Long	A1	3.8	2.1	Located within nature strip.
229b	Black Tea-tree	*Melaleuca bracteata*	Mature	8	3	300					300	330	Good	Good	Medium	1. Long	A1	3.6	2.1	Located within nature strip.
230	Monterey Pine	*Pinus radiata*	Mature	10	6	750					750	780	Fair	Fair	Low	3. Short	Z3	9.0	3.0	Canopy extends into corridor. Exempt species with low foliage density for species and apical dieback.
231	Loquat	*Eriobotrya japonica*	Mature	4	2	150					150	180	Good	Fair	Low	2. Medium	Z3	2.0	1.6	Canopy extends into corridor. Exempt species.
232	Olive	*Olea europaea*	Young	3	1	100					100	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor. Not a tree as defined in scope - captured as vegetation.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
233	Olive	*Olea europaea*	Semi-mature	3	1	150					150	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Canopy extends into corridor. Not a tree as defined in scope - captured as vegetation.
234	Queensland Brushbox	*Lophostemon confertus*	Mature	10	4	500					500	500	Good	Fair	High	2. Medium	A1	6.0	2.5	Canopy extends into corridor. Significant pruning to the south.
235	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	8	2	150					150	170	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridor.
236	Dwarf Lilly Pilly	*Acmena smithii var. minor*	Semi-mature	9	2	200					200	220	Good	Good	Medium	1. Long	A1	2.4	1.8	Canopy extends into corridor.
237	Coastal Banksia	*Banksia integrefolia*	Semi-mature	8	1.5	160					160	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridor.
238	Italian Cypress	*Cupressus sempervirens*	Mature	9	2	240					240	260	Good	Good	Medium	2. Medium	A1	2.9	1.9	Canopy extends into corridor.
239	Italian Cypress	*Cupressus sempervirens*	Mature	10	3	490					490	520	Good	Good	Medium	1. Long	A1	5.9	2.5	Canopy extends into corridor.
240	Italian Cypress	*Cupressus sempervirens*	Mature	10	3	480					480	490	Good	Good	Medium	2. Medium	A1	5.8	2.5	Canopy extends into corridor.
241	Bhutan Cypress	*Cupressus torulosa*	Mature	10	3	380					380	420	Good	Good	Medium	1. Long	A1	4.6	2.3	Canopy extends into corridor.
242	Weeping Bottlebrush	*Callistemon viminalis*	Young	3	1.5	100					100	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor directly adjacent to storm water drain. Not a tree as defined in scope - captured as vegetation.
243	Coastal Myall	*Acacia binervia*	Mature	5	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor directly adjacent to storm water drain.
243a	Avocado	*Persea gratissima*	Semi-mature	5	2	200					200	220	Good	Good	Low	5. Small/Young	Z1	2.4	1.8	Canopy extends into corridor.
244	Smooth Japanese Maple	*Acer palmatum*	Semi-mature	5	2	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
245	Eucalypt	*Eucalyptus spp*	Young	7	1.5	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy extends into corridor.
246	Weeping Bottlebrush	*Callistemon viminalis*	Mature	7	2	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridor.
247	Weeping Bottlebrush	*Callistemon viminalis*	Mature	8	2	180					180	200	Good	Good	Medium	1. Long	A1	2.2	1.7	Canopy extends into corridor.
248	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	8	2	160					160	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Canopy extends into corridor.
249	Southern Magnolia	*Magnolia grandiflora*	Mature	10	5	900					900	950	Fair	Good	High	2. Medium	A2	10.8	3.2	Canopy extends into corridor. Minor apical dieback. Monitor tree health.
250	Camphor Laurel	*Cinnamomum camphora*	Mature	11	5	1200					1200	1200	Good	Good	Medium	1. Long	A1	14.4	3.6	Canopy extends into corridor. DBH estimated.
251	Citrus	*Citrus spp*	Semi-mature	4	1	120					120	150	Fair	Fair	Low	5. Small/Young	Z3	2.0	1.5	Canopy within neighbouring property only.
252	Small Leaved Privet	*Ligustrum sinense*	Semi-mature	3	1	50					50	50	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Canopy extends into corridor. Exempt species. Not a tree as defined in scope - captured as vegetation.
253	Green Cestrum	*Cestrum parqui*	Semi-mature	3	1.5	100					100	120	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Canopy extends into corridor. Weed species. Not a tree as defined in scope - captured as vegetation.
254	Unknown	*Unknown spp*	Mature	5	4	480					480	480	Fair	Fair	Medium	3. Short	Z4	5.8	2.4	Canopy extends into corridor. Low foliage density with apical dieback. Minimal leaf remaining.
254a	Guava	*Psidium guajava*	Mature	4	1.5	100	150				180	200	Good	Good	Low	5. Small/Young	Z1	2.2	1.7	Canopy extends slightly into corridor.
255	Oleander	*Nerium oleander*	Mature	5	2	350					350	350	Good	Fair	Low	5. Small/Young	Z1	4.2	2.1	Canopy extends into corridor. DBH measured at ground.
256	Oleander	*Nerium oleander*	Semi-mature	4	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Canopy extends into corridor. DBH measured at ground.
257	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	8	4	180	200	300			403	450	Good	Fair	Medium	2. Medium	A1	4.8	2.4	Canopy extends into corridor.
258	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	2	330					330	330	Good	Good	Medium	1. Long	A1	4.0	2.1	Canopy within nature strip only. DBH measured below stems.
259	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	2	330					330	340	Good	Good	Medium	1. Long	A1	4.0	2.1	Canopy within nature strip only. DBH measured below stems.
260	Camphor Laurel	*Cinnamomum camphora*	Mature	8	4	500					500	500	Good	Fair	Low	3. Short	Z3	6.0	2.5	Located within corridor. Topped for power line clearance.
261	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	2.5	350					350	350	Good	Good	Medium	1. Long	A1	4.2	2.1	Canopy within nature strip only. DBH measured below stems.
262	Camphor Laurel	*Cinnamomum camphora*	Mature	7	4	1400					1400	1400	Good	Fair	Low	3. Short	Z3	15.0	3.8	Multi stem tree located within corridor and nature strip. Topped for power line clearance.
263	Camphor Laurel	*Cinnamomum camphora*	Mature	8	4	180	190	170			312	420	Good	Fair	Low	3. Short	Z3	3.7	2.3	Located within corridor. Exempt species topped for power line clearance.
264	Camphor Laurel	*Cinnamomum camphora*	Mature	7	4	400					400	400	Good	Fair	Low	3. Short	Z3	4.8	2.3	Located within corridor. Exempt species topped for power line clearance.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
265	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	110	100				149	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only.
266	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	400					400	400	Good	Fair	Low	5. Small/Young	Z1	4.8	2.3	Located within corridor. Multi stem tree DBH measured at ground.
267	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	1.5	100	110				149	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only.
268	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	350					350	350	Good	Fair	Low	5. Small/Young	Z1	4.2	2.1	Located within corridor. Multi stem tree DBH measured at ground.
269	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	100	80	90	50		164	250	Good	Good	Low	5. Small/Young	Z1	2.0	1.8	Canopy within nature strip only.
270	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
271	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	120	100	80	80		193	240	Good	Fair	Low	5. Small/Young	Z1	2.3	1.8	Canopy within nature strip only. Mechanical damage to trunk.
272	Sydney Golden Wattle	*Acacia longifolia*	Semi-mature	4	1	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
273	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
274	Broad Leaved Privet	*Ligustrum lucidum*	Semi-mature	5	1	160					160	170	Good	Good	Low	5. Small/Young	Z3	2.0	1.6	Located within corridor. Exempt species.
275	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	80	90	110			163	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only.
276	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
277	Cotoneaster	*Cotoneaster spp*	Semi-mature	4	1.5	80	80	100			151	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only.
278	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
279	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
280	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
281	Cotoneaster	*Cotoneaster spp*	Mature	5	3	170					170	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
282	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	100	100				141	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only. Mechanical damage to stem.
283	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
284	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
285	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
286	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	250					250	250	Good	Good	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
287	Wattle	*Acacia spp*	Mature	5	2	190					190	200	Good	Fair	Low	3. Short	Z9	2.3	1.7	Located within corridor. Trunk lean into boundary fence.
288	Cheese Tree	*Glochidion ferdinandi*	Mature	5	3	450					450	450	Fair	Fair	Medium	3. Short	Z9	5.4	2.4	Located within corridor. Multi stem tree DBH measured at ground. Topped for power line clearance.
289	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	1	110					110	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Canopy within nature strip only.
290	Wattle	*Acacia spp*	Semi-mature	4	1	100					100	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
291	Cheese Tree	*Glochidion ferdinandi*	Young	4	1	90					90	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
292	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	2	120	100				156	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Canopy extends into corridor. Branch failure at 500mm to the south.
G6	Cheese Tree	*Glochidion ferdinandi*	Semi-mature	5	2	100	150				180	200	Good	Fair	Medium	3. Short	Z9	2.2	1.7	Group of trees located within corridor and on nature strip. All topped at 5m for power line clearance. Approximately 15 trees.
293	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	4	1	80	130				153	200	Good	Good	Low	5. Small/Young	Z1	2.0	1.7	Canopy within nature strip only.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
294	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at ground.
295	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	3	1	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor. Multi stem tree DBH measured at ground. Not a tree as defined in scope - captured as vegetation.
296	Camphor Laurel	*Cinnamomum camphora*	Mature	8	3	260	250	290			463	600	Good	Fair	Low	3. Short	Z3	5.6	2.7	Located within corridor. Exempt species topped for power line clearance.
297	Swamp Oak	*Casuarina glauca*	Semi-mature	4	1	180					180	190	Good	Fair	Low	3. Short	Z9	2.2	1.6	Canopy extends into corridor. Topped for power line clearance.
298	Swamp Oak	*Casuarina glauca*	Semi-mature	4	1	80	80	190			221	300	Good	Fair	Low	3. Short	Z9	2.7	2.0	Canopy extends into corridor. Topped for power line clearance.
299	Swamp Oak	*Casuarina glauca*	Mature	4	2	360					360	410	Good	Fair	Medium	3. Short	Z9	4.3	2.3	Canopy extends into corridor. Topped for power line clearance.
300	Swamp Oak	*Casuarina glauca*	Mature	9	3	480					480	490	Good	Fair	Medium	3. Short	Z9	5.8	2.5	Canopy extends into corridor. Majority of crown topped for power line clearance.
301	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Semi-mature	4	2	250					250	250	Good	Good	Medium	1. Long	A1	3.0	1.8	Canopy extends slightly into corridor.
302	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	2	350					350	350	Good	Fair	Low	5. Small/Young	Z1	4.2	2.1	Canopy extends into corridor. Multi stem tree DBH measured at ground.
303	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Young	3	1	160					160	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Canopy extends into corridor. Not a tree as defined in scope - captured as vegetation.
304	Willow Pepermint	*Eucalyptus elata*	Mature	4	2	270					270	300	Good	Fair	Medium	1. Long	A1	3.2	2.0	Canopy extends into corridor. Minor trunk lean.
304a	Bhutan Cypress	*Cupressus torulosa*	Mature	10	2	530					530	530	Good	Good	Medium	1. Long	A1	6.4	2.5	Canopy extends into access way.
305	Wattle	*Acacia spp*	Mature	7	3	340					340	380	Fair	Fair	Medium	3. Short	Z4	4.1	2.2	Low foliage density for species with apical dieback. Early stages of decline.
306	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Canopy adjacent to footpath only. DBH estimated.
307	Bhutan Cypress	*Cupressus torulosa*	Mature	12	3	500					500	550	Good	Good	Medium	1. Long	A1	6.0	2.6	None.
308	Bhutan Cypress	*Cupressus torulosa*	Mature	12	3	500					500	550	Good	Good	Medium	1. Long	A1	6.0	2.6	None.
309	Japanese Camellia	*Camellia japonica*	Semi-mature	3	1	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Not a tree as defined in scope - captured as vegetation.
310	Bhutan Cypress	*Cupressus torulosa*	Mature	10	2	490					490	520	Good	Fair	Medium	3. Short	Z9	5.9	2.5	Topped for power line clearance.
311	Bhutan Cypress	*Cupressus torulosa*	Mature	10	2	450					450	460	Good	Fair	Medium	3. Short	Z9	5.4	2.4	Topped for power line clearance.
312	Bhutan Cypress	*Cupressus torulosa*	Mature	10	2	460					460	490	Good	Fair	Medium	3. Short	Z9	5.5	2.5	Topped for power line clearance.
313	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	150	110				186	200	Good	Good	Low	5. Small/Young	Z1	2.2	1.7	None.
314	Bhutan Cypress	*Cupressus torulosa*	Mature	8	2	420					420	440	Good	Fair	Medium	3. Short	Z9	5.0	2.3	Topped for power line clearance.
315	Bhutan Cypress	*Cupressus torulosa*	Mature	8	2	380					380	400	Fair	Fair	Medium	3. Short	Z9	4.6	2.3	Topped for power line clearance. Low foliage density for species.
316	Bhutan Cypress	*Cupressus torulosa*	Mature	8	2	400					400	440	Fair	Fair	Medium	3. Short	Z9	4.8	2.3	Topped for power line clearance.
317	Swamp Oak	*Casuarina glauca*	Semi-mature	8	2	150	140				205	240	Good	Fair	Medium	2. Medium	A1	2.5	1.8	Located within corridor.
318	Swamp Oak	*Casuarina glauca*	Semi-mature	7	1.5	110					110	130	Good	Good	Medium	1. Long	A1	2.0	1.5	Located within corridor.
319	Swamp Oak	*Casuarina glauca*	Mature	10	2	320					320	340	Good	Good	Medium	1. Long	A1	3.8	2.1	Located within corridor. Minor branch failure at 3m to north.
320	Swamp Oak	*Casuarina glauca*	Mature	12	3	430					430	480	Good	Good	High	1. Long	A1	5.2	2.4	Located within corridor.
321	Swamp Oak	*Casuarina glauca*	Mature	10	3	360					360	390	Good	Fair	Medium	2. Medium	A2	4.3	2.2	Located within corridor. Pruned for power lines.
322	Swamp Oak	*Casuarina glauca*	Mature	12	2	230					230	250	Good	Good	Medium	1. Long	A1	2.8	1.8	Located within corridor.
323	Swamp Oak	*Casuarina glauca*	Mature	11	2	200					200	240	Good	Good	Medium	1. Long	A1	2.4	1.8	Located within corridor.
324	Swamp Oak	*Casuarina glauca*	Semi-mature	9	1.5	120					120	140	Good	Good	Medium	1. Long	A1	2.0	1.5	Located within corridor.
325	Swamp Oak	*Casuarina glauca*	Mature	10	2	150	150	100			235	300	Good	Good	Medium	1. Long	A1	2.8	2.0	Located within corridor.
326	Swamp Oak	*Casuarina glauca*	Mature	11	2	310					310	350	Good	Good	Medium	1. Long	A1	3.7	2.1	Located within corridor.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
G7	Swamp Oak	*Casuarina glauca*	Mature	10	2	250					250	300	Good	Good	Medium	1. Long	A1	3.0	2.0	Group of trees located in fenced area adjacent the corridor. Approximately 7 trees.
327	Coastal Tea Tree	*Leptospermum laevigatum*	Semi-mature	2	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor. Unknown spp. Not a tree as defined in scope - captured as vegetation.
328	River She Oak	*Casuarina cunninghamiana*	Semi-mature	6	1	160					160	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
329	Snow In Summer	*Melaleuca linarifolia*	Semi-mature	6	1.5	180					180	200	Good	Good	Medium	1. Long	A1	2.2	1.7	Located within corridor.
329a	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	3.5	160	190	260			360	480	Good	Good	Medium	1. Long	A1	4.3	2.4	Located within nature strip.
G8	Mixed species	*Mixed spp*	Semi-mature	4	2	150					150	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Group of mixed species trees located within corridor. All trees have been topped for power line clearance. Could not access trees adjacent to rail. No safe place. Approximately 50 trees.
330	Weeping Bottlebrush	*Callistemon viminalis*	Mature	7	2	110	200				228	310	Good	Fair	Medium	2. Medium	A1	2.7	2.0	Canopy extends slightly into corridor. Located on top of masonry brick wall.
331	Swamp Oak	*Casuarina glauca*	Mature	4	2	270					270	310	Fair	Poor	Low	4. Remove	Z5	3.2	2.0	Topped for power line clearance.
332	Swamp Oak	*Casuarina glauca*	Mature	5	2	280					280	330	Good	Good	Low	4. Remove	Z5	3.4	2.1	Topped for power line clearance.
333	Swamp Oak	*Casuarina glauca*	Mature	9	3	440					440	460	Fair	Fair	Medium	3. Short	Z9	5.3	2.4	Topped for power line clearance.
334	River She Oak	*Casuarina cunninghamiana*	Dead	10	2	250					250	280	Dead	Poor	Low	4. Remove	Z4	3.0	1.9	Dead tree.
335	River She Oak	*Casuarina cunninghamiana*	Dead	10	2	250					250	300	Dead	Poor	Low	4. Remove	Z4	3.0	2.0	Dead tree.
336	River She Oak	*Casuarina cunninghamiana*	Mature	15	5	560					560	610	Good	Good	High	1. Long	A1	6.7	2.7	Canopy extends into corridor.
337	River She Oak	*Casuarina cunninghamiana*	Mature	13	3	330					330	350	Good	Good	Medium	1. Long	A1	4.0	2.1	None.
338	River She Oak	*Casuarina cunninghamiana*	Mature	13	3	330					330	350	Good	Good	Medium	1. Long	A1	4.0	2.1	None.
339	River She Oak	*Casuarina cunninghamiana*	Mature	7	2	340					340	360	Good	Fair	Medium	3. Short	Z9	4.1	2.2	Topped for power line clearance.
340	River She Oak	*Casuarina cunninghamiana*	Semi-mature	8	2	150					150	200	Good	Good	Medium	1. Long	A1	2.0	1.7	Located within corridor.
341	Sydney Golden Wattle	*Acacia longifolia*	Mature	10	2	280					280	300	Fair	Fair	Low	3. Short	Z4	3.4	2.0	Located within corridor. Low foliage density for species, in decline.
342	Wattle	*Acacia spp*	Dead	5	1.5	180					180	250	Good	Good	Low	4. Remove	Z4	2.2	1.8	Located within corridor. Dead tree.
343	Sydney Golden Wattle	*Acacia longifolia*	Mature	4	1.5	240					240	260	Good	Good	Low	5. Small/Young	Z1	2.9	1.9	Located within corridor.
344	Spotted Gum	*Corymbia maculata*	Semi-mature	5	2	220					220	240	Fair	Fair	Medium	3. Short	Z9	2.6	1.8	Topped for power line clearance.
345	Sydney Golden Wattle	*Acacia longifolia*	Mature	7	3	410					410	440	Good	Fair	Medium	3. Short	Z10	4.9	2.3	Located within corridor. Poor overall form, significantly pruned.
346	Spotted Gum	*Corymbia maculata*	Semi-mature	4	2	120	170				208	300	Good	Fair	Medium	5. Small/Young	Z1	2.5	2.0	Located within corridor.
347	Swamp Oak	*Casuarina glauca*	Semi-mature	4	1	150					150	180	Good	Fair	Low	3. Short	Z9	2.0	1.6	Located within corridor. Pruned for power line clearance.
348	Sydney Golden Wattle	*Acacia longifolia*	Mature	5	2	210					210	230	Good	Fair	Medium	2. Medium	A2	2.5	1.8	Located within corridor. Pruning to north.
349	Swamp Oak	*Casuarina glauca*	Semi-mature	8	2	190					190	210	Good	Good	Medium	1. Long	A1	2.3	1.7	Located within corridor.
350	Spotted Gum	*Corymbia maculata*	Mature	17	4.5	460					460	480	Good	Good	High	1. Long	A1	5.5	2.4	Located within corridor.
351	Swamp Oak	*Casuarina glauca*	Semi-mature	4	2	160	100	50			195	320	Good	Fair	Low	3. Short	Z9	2.3	2.1	Located within corridor. Topped for power line clearance.
352	Swamp Oak	*Casuarina glauca*	Mature	4.5	2	280					280	300	Good	Fair	Medium	3. Short	Z9	3.4	2.0	Located within corridor. Topped for power line clearance.
353	Swamp Oak	*Casuarina glauca*	Semi-mature	4	1.5	160					160	190	Good	Fair	Low	5. Small/Young	Z9	2.0	1.6	Located within corridor. Topped for power line clearance.
354	Spotted Gum	*Corymbia maculata*	Mature	13	4	410					410	460	Good	Fair	Medium	2. Medium	A2	4.9	2.4	Located within corridor. Fair architectural framework.
355	Swamp Oak	*Casuarina glauca*	Semi-mature	6	1	110					110	130	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Vine through crown.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
356	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	6	1.5	100	100	100			173	250	Good	Fair	Low	5. Small/Young	Z3	2.1	1.8	Located within corridor. Exempt species.
357	Unknown	*Unknown spp*	Dead	8	1	140					140	160	Dead	Poor	Low	4. Remove	Z4	2.0	1.5	Located within corridor. Dead tree.
358	Swamp Oak	*Casuarina glauca*	Young	6.5	1	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
359	Unknown	*Unknown spp*	Dead	9	1	140					140	180	Dead	Poor	Low	4. Remove	Z4	2.0	1.6	Located within corridor. Dead tree.
360	River She Oak	*Casuarina cunninghamiana*	Semi-mature	7	1.5	140					140	160	Good	Good	Medium	5. Small/Young	Z1	2.0	1.5	Located within corridor.
361	Unknown	*Unknown spp*	Dead	10	2	200					200	220	Dead	Poor	Low	4. Remove	Z4	2.4	1.8	Located within corridor. Dead tree.
362	Parramatta Wattle	*Acacia parramattensis*	Semi-mature	7	2	100	120				156	200	Fair	Fair	Low	3. Short	Z4	2.0	1.7	Located within corridor. South stem dead.
363	Unknown	*Unknown spp*	Dead	7	1	180					180	200	Dead	Poor	Low	4. Remove	Z4	2.2	1.7	Located within corridor. Dead tree.
364	Swamp Oak	*Casuarina glauca*	Semi-mature	6	1	120					120	130	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
365	Parramatta Wattle	*Acacia parramattensis*	Mature	8	2	150					150	180	Good	Good	Medium	2. Medium	A1	2.0	1.6	Located within corridor.
G9	Turpentine	*Syncarpia glomulifera*	Semi-mature	7	2	180					180	210	Good	Fair	Medium	3. Short	Z9	2.2	1.7	Group of turpentine and casuarinas located within corridor. Trees have been topped for power line clearance. Approximately 4 trees.
366	Peppercorn Tree	*Schinus molle*	Mature	6	4	500					500	550	Fair	Fair	Medium	2. Medium	A2	6.0	2.6	Located within corridor. Low foliage density.
367	Swamp Oak	*Casuarina glauca*	Mature	10	2	200					200	220	Good	Good	Medium	1. Long	A1	2.4	1.8	Located within aquatic centre.
368	Swamp Oak	*Casuarina glauca*	Mature	12	2	300					300	320	Good	Good	Medium	1. Long	A1	3.6	2.1	Located within aquatic centre. Pruned for power lines.
369	Swamp Oak	*Casuarina glauca*	Mature	11	2	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Located within aquatic centre. Pruned for power lines.
370	Swamp Oak	*Casuarina glauca*	Mature	14	2	300					300	350	Good	Good	Medium	1. Long	A1	3.6	2.1	Located within aquatic centre. Pruned for power lines.
371	Swamp Oak	*Casuarina glauca*	Mature	14	2	300					300	340	Good	Good	Medium	1. Long	A1	3.6	2.1	Located within aquatic centre. Pruned for power lines.
372	Swamp Oak	*Casuarina glauca*	Mature	15	4	490					490	540	Good	Good	High	1. Long	A1	5.9	2.6	Located within aquatic centre. Pruned for power lines.
373	Swamp Oak	*Casuarina glauca*	Mature	15	3	410					410	440	Good	Good	Medium	1. Long	A1	4.9	2.3	Located within aquatic centre. Pruned for power lines.
374	Pin Oak	*Quercus palustris*	Mature	6.5	3	300					300	320	Good	Fair	Medium	3. Short	Z9	3.6	2.1	Located within corridor. Topped for power line clearance.
375	Pin Oak	*Quercus palustris*	Mature	8	3	360					360	400	Good	Fair	Medium	3. Short	Z9	4.3	2.3	Located within corridor. Topped for power line clearance.
376	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	1	120					120	150	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
377	Pin Oak	*Quercus palustris*	Mature	8	2	240					240	280	Good	Fair	Medium	3. Short	Z9	2.9	1.9	Located within corridor. Topped for power line clearance.
378	Tea Tree	*Leptospermum spp*	Semi-mature	5	1	100					100	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
379	River She Oak	*Casuarina cunninghamiana*	Semi-mature	9	1.5	140					140	160	Good	Good	Medium	1. Long	A1	2.0	1.5	Located within corridor.
380	River She Oak	*Casuarina cunninghamiana*	Semi-mature	9	1.5	150					150	150	Good	Good	Medium	1. Long	A1	2.0	1.5	Located within corridor.
381	River She Oak	*Casuarina cunninghamiana*	Young	8	1	100					100	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
382	Sydney Golden Wattle	*Acacia longifolia*	Semi-mature	6	1	110					110	120	Good	Fair	Low	3. Short	Z9	2.0	1.5	Located within corridor. Topped for power line clearance.
383	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	6	2	150					150	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
384	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	2	100	170				197	250	Good	Fair	Medium	3. Short	Z9	2.4	1.8	Located within corridor. Topped for power line clearance.
385	Unknown	*Unknown spp*	Dead	8	2	330					330	350	Dead	Poor	Low	4. Remove	Z4	4.0	2.1	Located within corridor. Dead tree.
386	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	2	140	150				205	240	Good	Good	Medium	1. Long	A1	2.5	1.8	Located within corridor.
387	Swamp Oak	*Casuarina glauca*	Semi-mature	9.5	1	110					110	130	Good	Fair	Medium	2. Medium	A1	2.0	1.5	Located within corridor. Suppressed by adjacent trees.
388	Turpentine	*Syncarpia glomulifera*	Young	6	1	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
389	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	2	220					220	240	Good	Good	Medium	1. Long	A1	2.6	1.8	Located within corridor.
390	Turpentine	*Syncarpia glomulifera*	Semi-mature	9	2	210					210	240	Good	Good	Medium	1. Long	A1	2.5	1.8	Located within corridor.
391	Turpentine	*Syncarpia glomulifera*	Young	6	1	100	90	80			157	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Located within corridor. Multi stem tree with failure of central stem.
392	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4.5	2	180					180	190	Good	Fair	Low	5. Small/Young	Z1	2.2	1.6	Located within corridor.
393	Pin Oak	*Quercus palustris*	Mature	8	3	750					750	750	Fair	Poor	Medium	4. Remove	Z5	9.0	2.9	Located within corridor. Topped for power line clearance. Reduced foliage density.
394	Pin Oak	*Quercus palustris*	Semi-mature	8	3	120	190				225	380	Good	Fair	Medium	3. Short	Z9	2.7	2.2	Located within corridor. Topped for power line clearance.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
395	Pin Oak	*Quercus palustris*	Semi-mature	8	3	150	180				234	300	Good	Fair	Medium	3. Short	Z9	2.8	2.0	Located within corridor. Topped for power line clearance.
396	Pin Oak	*Quercus palustris*	Mature	16	3	440					440	480	Good	Fair	Medium	3. Short	Z10	5.3	2.4	Located within corridor. Asymmetric crown shape due to power line clearance.
397	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	2	160					160	180	Good	Fair	Medium	3. Short	Z9	2.0	1.6	Located within corridor. Topped for power line clearance.
398	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	2	220					220	250	Good	Fair	Medium	3. Short	Z9	2.6	1.8	Located within corridor. Topped for power line clearance.
399	Pin Oak	*Quercus palustris*	Semi-mature	8	3	120	180	190	160	160	366	700	Good	Fair	Medium	3. Short	Z9	4.4	2.8	Located within corridor. Topped for power line clearance.
400	Pin Oak	*Quercus palustris*	Semi-mature	8	3	160	160	200	300		426	900	Good	Fair	Medium	3. Short	Z9	5.1	3.2	Located within corridor. Topped for power line clearance.
401	Swamp Oak	*Casuarina glauca*	Semi-mature	5	1.5	400					400	400	Good	Fair	Low	3. Short	Z9	4.8	2.3	Located within corridor. Topped for power line clearance. Multi stem tree DBH measured at ground.
402	Sydney Golden Wattle	*Acacia longifolia*	Mature	5	2	200					200	210	Good	Good	Low	2. Medium	Z1	2.4	1.7	Located within corridor.
403	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	5	2	150					150	180	Good	Good	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor. DBH estimated.
404	Wattle	*Acacia spp*	Semi-mature	6	2	140					140	150	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
405	Chinese Tallo	*Triadica sebifera*	Young	4	1	80	100				128	150	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
406	Chinese Tallo	*Triadica sebifera*	Young	4	1	110					110	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
407	Chinese Tallo	*Triadica sebifera*	Young	4	1	80					80	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
408	Pin Oak	*Quercus palustris*	Mature	14	5	440					440	460	Good	Fair	Medium	2. Medium	A2	5.3	2.4	Located within corridor. Asymmetric crown shape due to power line clearance.
409	Chinese Tallo	*Triadica sebifera*	Mature	5	2.5	230	220				318	450	Good	Fair	Medium	2. Medium	A2	3.8	2.4	Located within nature strip. Pruned for power lines.
410	Chinese Tallo	*Triadica sebifera*	Mature	5	3	420					420	440	Good	Fair	Medium	2. Medium	A2	5.0	2.3	Located within nature strip. Pruned for power lines.
411	Pin Oak	*Quercus palustris*	Semi-mature	6	3	140	200	250	180	200	441	900	Good	Fair	Medium	3. Short	Z9	5.3	3.2	Located within corridor. Topped for power line clearance.
412	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	4	2	80	80	80	60		151	450	Good	Fair	Low	5. Small/Young	Z3	2.0	2.4	Located within corridor. Exempt species.
413	Pin Oak	*Quercus palustris*	Mature	5	3	420					420	450	Good	Fair	Medium	5. Small/Young	Z9	5.0	2.4	Located within corridor. Topped for power line clearance.
414	Norfolk Island Hibiscus	*Lagunaria patersonia*	Mature	5	2	340					340	400	Good	Fair	Medium	2. Medium	A2	4.1	2.3	Located within nature strip. Pruned for power lines.
415	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	5	4	800					800	840	Good	Fair	High	3. Short	Z10	9.6	3.1	Located within nature strip. Topped for power lines.
416	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	6	1	140					140	150	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
417	Chinese Tallo	*Triadica sebifera*	Young	3	1.5	50	50	90			114	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Located within corridor. Not a tree as defined in scope - captured as vegetation.
418	Black Peppermint	*Eucalyptus nicholii*	Mature	5	5	520					520	540	Fair	Fair	Medium	3. Short	Z10	6.2	2.6	Located within nature strip. Topped for power lines. Canopy extends into corridor. Exempt species.
419	Port Jackson Fig	*Ficus rubiginosa*	Young	4	1	100					100	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
420	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	2	80	80	120	100	100	217	400	Good	Fair	Low	5. Small/Young	Z1	2.6	2.3	Located within corridor.
G10	Mixed species	*Mixed spp*	Semi-mature	5	1.5	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Mixed species group located within corridor. Approximately 7 trees.
421	Chinese Tallo	*Triadica sebifera*	Mature	5	2	300					300	330	Good	Fair	Medium	3. Short	Z10	3.6	2.1	Located within nature strip. Topped for power lines.
422	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	5	3	450					450	480	Good	Fair	Medium	3. Short	Z10	5.4	2.4	Located within nature strip. Topped for power lines.
423	Norfolk Island Hibiscus	*Lagunaria patersonia*	Mature	5	2.5	310					310	330	Good	Fair	Medium	2. Medium	A2	3.7	2.1	Located within nature strip. Pruned for power lines.
424	Sweetgum	*Liquidambar styraciflua*	Mature	8	3	330					330	350	Good	Fair	Low	2. Medium	Z3	4.0	2.1	Located within nature strip. Pruned for power line clearance.Exempt species.
425	Sweetgum	*Liquidambar styraciflua*	Mature	8	4	410					410	440	Good	Fair	Low	2. Medium	Z3	4.9	2.3	Located within nature strip. Minor pruning for power lines. Exempt species.
426	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	1	90	110				142	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Located within corridor.
427	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	1	100	110				149	250	Good	Fair	Low	5. Small/Young	Z1	2.0	1.8	Located within corridor.
428	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	1	100	100	110			179	290	Good	Fair	Low	5. Small/Young	Z1	2.1	2.0	Located within corridor.
429	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	1	80	120				144	200	Good	Fair	Low	5. Small/Young	Z1	2.0	1.7	Located within corridor.
430	Swamp Oak	*Casuarina glauca*	Semi-mature	7	1	120					120	160	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
431	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	11	5	780					780	840	Good	Good	High	1. Long	A1	9.4	3.1	Located within nature strip.
432	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Young	4	0.5	100					100	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.

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Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
433	River She Oak	*Casuarina cunninghamiana*	Young	6	1	80	80				113	150	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
434	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor. Multi stem tree DBH measured at ground.
435	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Young	4	0.5	50					50	70	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
436	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Young	4	0.5	110					110	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Topped.
437	Sweetgum	*Liquidambar styraciflua*	Mature	11	4	440					440	450	Good	Good	Low	1. Long	Z3	5.3	2.4	Located within nature strip. Exempt species.
438	Swamp Oak	*Casuarina glauca*	Semi-mature	3	1	160					160	180	Good	Fair	Low	3. Short	Z9	2.0	1.6	Located within corridor. Topped at 3m. Not a tree as defined in scope - captured as vegetation.
439	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Semi-mature	4	2	110					110	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Pittosporum growing at base.
440	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Semi-mature	4	1	120					120	170	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
441	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Semi-mature	4.5	1	80	100	110			169	450	Good	Good	Low	5. Small/Young	Z1	2.0	2.4	Located within corridor.
442	Tree of Heaven	*Ailanthus altissima*	Semi-mature	4	2	120					120	150	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
443	Swamp Oak	*Casuarina glauca*	Semi-mature	9	1	150					150	180	Fair	Fair	Medium	2. Medium	A2	2.0	1.6	Located within corridor. Low foliage density for species.
444	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Young	4	1	100	50	40	40		125	250	Good	Fair	Low	5. Small/Young	Z1	2.0	1.8	Located within corridor.
445	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	11	4	750					750	800	Good	Good	High	1. Long	A1	9.0	3.0	Located within nature strip.
446	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Semi-mature	4	1.5	280					280	300	Good	Fair	Low	3. Short	Z9	3.4	2.0	Located within corridor. Topped for power lines.
447	Swamp Oak	*Casuarina glauca*	Young	4	1	80					80	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
448	Swamp Oak	*Casuarina glauca*	Semi-mature	5	1	100	110				149	200	Fair	Poor	Low	4. Remove	Z5	2.0	1.7	Located within corridor. Crown failure at 5m.
449	Swamp Oak	*Casuarina glauca*	Young	4	1	40					40	50	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
450	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Young	3	0.5	100					100	120	Fair	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Topped at 3m. Not a tree as defined in scope - captured as vegetation.
G11	Swamp Oak	*Casuarina glauca*	Semi-mature	7	1	100					100	150	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Group of casuarinas located within corridor. Approximately 5 trees.
451	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	4.5	2	400	250				472	600	Good	Fair	Medium	3. Short	Z9	5.7	2.7	Located within corridor. Topped for power line clearance.
452	Black Peppermint	*Eucalyptus nicholii*	Mature	10	4	510					510	550	Fair	Fair	Medium	3. Short	Z9	6.1	2.6	Located within nature strip. Asymmetric crown shape due to power line clearance. Fungal bracket (Phellinus spp) on north side of trunk. Extent of decay in unknown.
453	Parramatta Wattle	*Acacia parramattensis*	Mature	9	1.5	110					110	120	Good	Good	Medium	2. Medium	A1	2.0	1.5	Located within corridor.
454	Parramatta Wattle	*Acacia parramattensis*	Semi-mature	6	1	100					100	110	Good	Fair	Low	3. Short	Z9	2.0	1.5	Located within corridor. Topped at 6m.
455	Chinese Tallo	*Triadica sebifera*	Mature	7	2	250					250	280	Good	Good	Medium	1. Long	A1	3.0	1.9	Located within nature strip.
456	Turpentine	*Syncarpia glomulifera*	Semi-mature	7	1.5	170					170	190	Good	Fair	Medium	1. Long	A1	2.0	1.6	Located within corridor.
457	Parramatta Wattle	*Acacia parramattensis*	Mature	8	2	160					160	180	Good	Fair	Medium	2. Medium	A2	2.0	1.6	Located within corridor. Pruned for power line clearance.
458	Norfolk Island Hibiscus	*Lagunaria patersonia*	Mature	6	1.5	240					240	280	Good	Fair	Medium	2. Medium	A2	2.9	1.9	Located within nature strip. Pruned for power lines.
459	Chinese Tallo	*Triadica sebifera*	Semi-mature	6	1.5	210					210	230	Good	Fair	Medium	2. Medium	A2	2.5	1.8	Located within nature strip. Pruned for power lines.
460	Prickly Leaved Paperbark	*Melaleuca styphelioides*	Mature	4	2	280					280	330	Good	Fair	Medium	3. Short	Z9	3.4	2.1	Located within corridor. Topped at 4m.
461	Chinese Tallo	*Triadica sebifera*	Mature	5	2	260	250				361	490	Good	Fair	Medium	2. Medium	A2	4.3	2.5	Located within nature strip. Pruned for power lines.
462	Chinese Tallo	*Triadica sebifera*	Mature	5	2	300					300	410	Good	Fair	Medium	2. Medium	A2	3.6	2.3	Located within nature strip. Pruned for power lines.
463	Swamp Oak	*Casuarina glauca*	Semi-mature	8.5	1.5	100	100	110			179	300	Good	Fair	Medium	5. Small/Young	Z1	2.1	2.0	Located within corridor.
464	Swamp Oak	*Casuarina glauca*	Semi-mature	7	1	100	100	100			173	280	Good	Fair	Low	5. Small/Young	Z1	2.1	1.9	Located within corridor.
465	Swamp Oak	*Casuarina glauca*	Young	6.5	1	80					80	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
466	Chinese Tallo	*Triadica sebifera*	Mature	5	2	240	200				312	400	Good	Fair	Medium	2. Medium	A2	3.7	2.3	Located within nature strip. Co-dominant stems with tight union. Pruned for power lines.
467	Swamp Oak	*Casuarina glauca*	Semi-mature	7	1	110					110	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
468	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor. Multi stem tree DBH measured at ground.
469	Chinese Tallo	*Triadica sebifera*	Mature	5	2	370					370	390	Good	Good	Medium	2. Medium	A1	4.4	2.2	Located within nature strip. Growing under power lines. DBH measured below stems.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
470	Tree of Heaven	*Ailanthus altissima*	Semi-mature	4	1.5	110					110	130	Good	Good	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
471	Tree of Heaven	*Ailanthus altissima*	Semi-mature	4	1.5	100					100	110	Good	Good	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
472	Chinese Tallo	*Triadica sebifera*	Mature	5	2	200	290				352	440	Good	Good	Medium	2. Medium	A1	4.2	2.3	Located within nature strip. Growing under power lines.
473	Tree of Heaven	*Ailanthus altissima*	Semi-mature	4	1.5	100					100	120	Good	Good	Very Low	5. Small/Young	Z3	2.0	1.5	Located within corridor. Exempt species.
474	Snow In Summer	*Melaleuca linarifolia*	Young	4	1	80	80				113	160	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
475	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	3	1	300					300	340	Good	Fair	Medium	3. Short	Z9	3.6	2.1	Located within corridor. Topped for power lines. Not a tree as defined in scope - captured as vegetation.
476	Broad Leaved Paperbark	*Melaleuca quinquenervia*	Mature	5	2	750					750	900	Good	Fair	Medium	3. Short	Z9	9.0	3.2	Located within nature strip. Topped for power line clearance.
477	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1.5	310					310	320	Good	Fair	Medium	2. Medium	A1	3.7	2.1	Located within nature strip. Pruned for power lines.
478	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1.5	230					230	260	Good	Fair	Medium	2. Medium	A1	2.8	1.9	Located within nature strip. Pruned for power lines.
479	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1	210	170				270	280	Good	Fair	Medium	2. Medium	A1	3.2	1.9	Located within nature strip. Pruned for power lines.
480	Holm Oak	*Quercus ilex*	Mature	4	2.5	350					350	400	Good	Fair	Medium	3. Short	Z9	4.2	2.3	Located within corridor. Topped for power line clearance.
481	Black Peppermint	*Eucalyptus nicholii*	Mature	5	1.5	280					280	300	Fair	Fair	Low	2. Medium	Z3	3.4	2.0	Located within nature strip. Topped for power lines. Exempt species.
482	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	4	1.5	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Located within corridor. Exempt species.
483	Norfolk Island Hibiscus	*Lagunaria patersonia*	Mature	5.5	2	350					350	380	Good	Fair	Medium	2. Medium	A2	4.2	2.2	Located within nature strip. Pruned for power lines.
484	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1	100					100	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within nature strip. Pruned for power lines.
485	Camphor Laurel	*Cinnamomum camphora*	Mature	5	2.5	410					410	440	Good	Fair	Low	3. Short	Z9	4.9	2.3	Located within corridor. Topped for power line clearance.
486	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1.5	160	150				219	290	Good	Fair	Low	3. Short	Z9	2.6	2.0	Located within nature strip. Topped for power lines.
487	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	1.5	270					270	350	Good	Fair	Medium	2. Medium	A2	3.2	2.1	Located within nature strip. Pruned for power lines.
488	Chinese Tallo	*Triadica sebifera*	Semi-mature	4	2	150	140				205	280	Good	Fair	Medium	2. Medium	A2	2.5	1.9	Located within nature strip. Pruned for power lines.
489	Black Peppermint	*Eucalyptus nicholii*	Mature	12	5	640					640	700	Good	Fair	Medium	2. Medium	Z3	7.7	2.8	Located within nature strip. Asymmetric crown shape due to power line clearance. Exempt species.
490	Sweetgum	*Liquidambar styraciflua*	Mature	8	3	390					390	410	Good	Fair	Low	2. Medium	Z3	4.7	2.3	Located within nature strip. Pruned for power lines. Exempt species.
491	Sweetgum	*Liquidambar styraciflua*	Mature	10	4	460					460	480	Good	Fair	Low	2. Medium	Z3	5.5	2.4	Located within nature strip. Pruned for power lines. Exempt species.
492	Black Peppermint	*Eucalyptus nicholii*	Mature	11	5	920					920	990	Good	Fair	Medium	2. Medium	Z3	11.0	3.3	Located within nature strip. Pruned for power lines. Exempt species.
493	Sweetgum	*Liquidambar styraciflua*	Mature	9.5	4	460					460	480	Good	Fair	Low	2. Medium	Z3	5.5	2.4	Located within nature strip. Pruned for power lines. Exempt species.
494	Sweetgum	*Liquidambar styraciflua*	Mature	9	4	410					410	430	Good	Fair	Low	2. Medium	Z3	4.9	2.3	Located within nature strip. Pruned for power lines. Exempt species.
495	Sweetgum	*Liquidambar styraciflua*	Mature	10	4	430					430	470	Good	Fair	Low	2. Medium	Z3	5.2	2.4	Located within nature strip. Pruned for power lines. Exempt species.
496	Sweetgum	*Liquidambar styraciflua*	Mature	9	4	400					400	440	Good	Fair	Low	5. Small/Young	Z3	4.8	2.3	Located within nature strip. Pruned for power lines. Exempt species.
497	Sweetgum	*Liquidambar styraciflua*	Mature	9	4	450					450	490	Good	Fair	Low	2. Medium	Z3	5.4	2.5	Located within nature strip. Pruned for power lines. Exempt species.
498	Sweetgum	*Liquidambar styraciflua*	Mature	9	4	500					500	540	Good	Fair	Low	2. Medium	Z3	6.0	2.6	Located within nature strip. Pruned for power lines. Exempt species.
499	Sweet Pittosporum	*Pittosporum undulatum*	Mature	5	2	240					240	260	Good	Good	Medium	1. Long	A1	2.9	1.9	Located within corridor.
500	Oleander	*Nerium oleander*	Semi-mature	3	1	350					350	350	Good	Fair	Low	5. Small/Young	Z1	4.2	2.1	Located within corridor. Multi stem tree DBH measured at base. Not a tree as defined in scope - captured as vegetation.
501	Chinese Hackberry	*Celtis sinensis*	Mature	4	1.5	250					250	250	Good	Fair	Very Low	5. Small/Young	Z3	3.0	1.8	Located within corridor. Multi stem tree DBH measured at base. Exempt species.
502	Cocos Palm	*Syragrus romanzoffianum*	Mature	6	3	300					300	NA	Good	Good	Low	1. Long	Z3	3.6	NA	Located within corridor. Exempt species.
503	She Oak	*Casuarina spp*	Mature	8	2	220					220	250	Good	Good	Medium	1. Long	A1	2.6	1.8	Located within corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
504	Tallowood	*Eucalyptus microcorys*	Mature	18	6	720					720	780	Good	Fair	High	2. Medium	A2	8.6	3.0	Located within corridor. Asymmetric crown shape caused by power line clearance.
505	Parramatta Wattle	*Acacia parramattensis*	Young	3	1	50					50	80	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Not a tree as defined in scope - captured as vegetation.
506	Parramatta Wattle	*Acacia parramattensis*	Mature	5	1.5	100					100	120	Poor	Fair	Very Low	4. Remove	Z4	2.0	1.5	Located within corridor. In advanced stages of decline.
507	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	3	1.5	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor. Multi stem tree DBH measured at base. Not a tree as defined in scope - captured as vegetation.
508	Parramatta Wattle	*Acacia parramattensis*	Young	3	1	100					100	100	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor. Not a tree as defined in scope - captured as vegetation.
509	Wattle	*Acacia spp*	Dead	6	2	280					280	300	Dead	Poor	Very Low	4. Remove	Z4	3.4	2.0	Located within corridor. Dead tree.
510	Parramatta Wattle	*Acacia parramattensis*	Mature	7	2	180					180	200	Good	Good	Medium	2. Medium	A1	2.2	1.7	Located within corridor.
511	Bracelet Honey Myrtle	*Melaleuca armillaris*	Mature	6	3	160	120	130	110		263	450	Good	Fair	Medium	2. Medium	A1	3.2	2.4	Located within nature strip. Canopy extends into corridor.
511a	Canary Island Date Palm	*Phoenix canariensis*	Dead	5	1	350					350	NA	Poor	Poor	Very Low	4. Remove	Z4	2.0	NA	Located within nature strip. Dead tree, only trunk remains.
512	Silky Oak	*Grevillea robusta*	Semi-mature	8	2	170					170	190	Good	Good	Medium	2. Medium	A1	2.0	1.6	Located within corridor.
513	Silky Oak	*Grevillea robusta*	Young	6	1	80					80	100	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
514	Chinese Hackberry	*Celtis sinensis*	Semi-mature	3	1.5	250					250	250	Good	Fair	Very Low	5. Small/Young	Z3	3.0	1.8	Located within corridor. Exempt species. Not a tree as defined in scope - captured as vegetation.
515	Cotoneaster	*Cotoneaster spp*	Semi-mature	4	1.5	80	100				128	250	Good	Fair	Low	5. Small/Young	Z1	2.0	1.8	Located within nature strip.
516	Lemon Scented Tea Tree	*Leptospermum petersonii*	Semi-mature	4.5	1	160					160	180	Fair	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within nature strip. Health in decline.
517	Sweet Pittosporum	*Pittosporum undulatum*	Mature	6	2	290					290	300	Good	Good	Medium	1. Long	A1	3.5	2.0	Located within nature strip.
518	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2	170					170	200	Good	Good	Low	5. Small/Young	Z1	2.0	1.7	Located within nature strip.
519	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	3	330					330	400	Good	Good	Medium	1. Long	A1	4.0	2.3	Located within nature strip.
520	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	2	150	150	160			266	380	Good	Fair	Medium	2. Medium	A1	3.2	2.2	Located within nature strip. Pruned for power lines.
521	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	5	2	340					340	360	Good	Fair	Medium	2. Medium	A2	4.1	2.2	Located within nature strip. Trunk lean. Suppressed by adjacent tree.
522	Silky Oak	*Grevillea robusta*	Mature	10	4	450					450	480	Good	Good	Medium	1. Long	A1	5.4	2.4	Located within nature strip. Canopy extends into corridor.
523	Tallowood	*Eucalyptus microcorys*	Mature	9	3.5	320					320	350	Good	Fair	Medium	3. Short	Z9	3.8	2.1	Located within corridor. Loss of central leader.
524	Queensland Brushbox	*Lophostemon confertus*	Semi-mature	7.5	1.5	150					150	180	Good	Good	Medium	1. Long	A1	2.0	1.6	Located within corridor.
525	Tallowood	*Eucalyptus microcorys*	Mature	12	3	280					280	300	Good	Good	Medium	1. Long	A1	3.4	2.0	Located within corridor.
526	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	2.5	450					450	450	Good	Fair	Medium	2. Medium	A2	5.4	2.4	Located within nature strip. Multi stem tree DBH measured at base. Topped for power line clearance.
527	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	3	600					600	600	Good	Fair	Medium	2. Medium	A2	7.2	2.7	Located within nature strip. Multi stem tree DBH measured at base. Topped for power line clearance.
528	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	2	340					340	360	Good	Fair	Medium	2. Medium	A2	4.1	2.2	Located within nature strip. Pruned for power lines.
529	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	3	390					390	440	Good	Fair	Medium	2. Medium	A2	4.7	2.3	Located within nature strip. Topped for power line clearance.
530	Weeping Bottlebrush	*Callistemon viminalis*	Mature	5	3	220	170	160	160		358	450	Good	Fair	Medium	2. Medium	A2	4.3	2.4	Located within nature strip. Pruned for power lines.
531	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4.5	3	460					460	460	Good	Fair	Medium	2. Medium	A2	5.5	2.4	Located within nature strip. Multi stem tree DBH measured at base. Topped for power line clearance.
532	Common or Black Mulberry	*Morus nigra*	Semi-mature	3	1.5	100	100				141	200	Good	Fair	Low	5. Small/Young	Z3	2.0	1.7	Located within corridor. Exempt species. Not a tree as defined in scope - captured as vegetation.
533	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	3	440					440	440	Good	Fair	Medium	2. Medium	A2	5.3	2.3	Located within nature strip. Multi stem tree DBH measured at base. Topped for power line clearance.
534	Weeping Bottlebrush	*Callistemon viminalis*	Mature	4	3	540					540	540	Good	Fair	Medium	2. Medium	A2	6.5	2.6	Located within nature strip. Multi stem tree DBH measured at base. Topped for power line clearance.
535	Turpentine	*Syncarpia glomulifera*	Semi-mature	4	1.5	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within nature strip. Pruned for power lines.
536	Black Peppermint	*Eucalyptus nicholii*	Mature	10	4.5	790					790	840	Fair	Fair	Medium	2. Medium	Z3	9.5	3.1	Located within nature strip. Low foliage density for species. Pruned for power line clearance.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
537	Turpentine	*Syncarpia glomulifera*	Semi-mature	8	1.5	200					200	220	Good	Good	Medium	1. Long	A1	2.4	1.8	Located within nature strip.
538	Turpentine	*Syncarpia glomulifera*	Semi-mature	6	1.5	200					200	220	Good	Fair	Medium	2. Medium	A1	2.4	1.8	Located within nature strip. Co-dominant stems at 1m.
539	Sydney Golden Wattle	*Acacia longifolia*	Mature	4	1	150					150	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
540	Sydney Golden Wattle	*Acacia longifolia*	Mature	4	1	150					150	160	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
541	Sydney Golden Wattle	*Acacia longifolia*	Mature	4	1	150	110				186	180	Good	Fair	Low	5. Small/Young	Z1	2.2	1.6	Located within corridor.
542	Sydney Golden Wattle	*Acacia longifolia*	Semi-mature	4	1	100					100	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor.
543	Sydney Golden Wattle	*Acacia longifolia*	Mature	4	1	160					160	180	Good	Fair	Low	5. Small/Young	Z1	2.0	1.6	Located within corridor.
544	Wallangarra White Gum	*Eucalyptus scoparia*	Mature	14	6	730					730	750	Good	Fair	Medium	2. Medium	Z3	8.8	2.9	Located within nature strip. Exempt species. Pruned for power line clearance.
545	Wallangarra White Gum	*Eucalyptus scoparia*	Mature	14	6	680					680	750	Good	Fair	Medium	2. Medium	Z3	8.2	2.9	Located within nature strip. Exempt species. Pruned for power line clearance.

Explanatory Notes

Tree Species - Common name followed by botanical name. Where species is unknown it is indicated with an *'spp'.*

Age Class - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y).

Diameter at Breast Height (DBH) - Measured with a DBH tape or estimated at approximately 1.4m above ground level.

Diameter Above root Buttresses (DAB): Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.

Height - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.

Spread - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.

Tree Protection Zone (TPZ) - DBH x 12. Measured in radius from the centre of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 metre outside the crown projection.

Structural Root Zone (SRZ) - $(DAB \times 50)^{0.42} \times 0.64$. Measured in radius from the centre of the trunk. Rounded up to nearest 0.1m.

Health - Good/Fair/Poor/Dead

Structure - Good/Fair/Poor

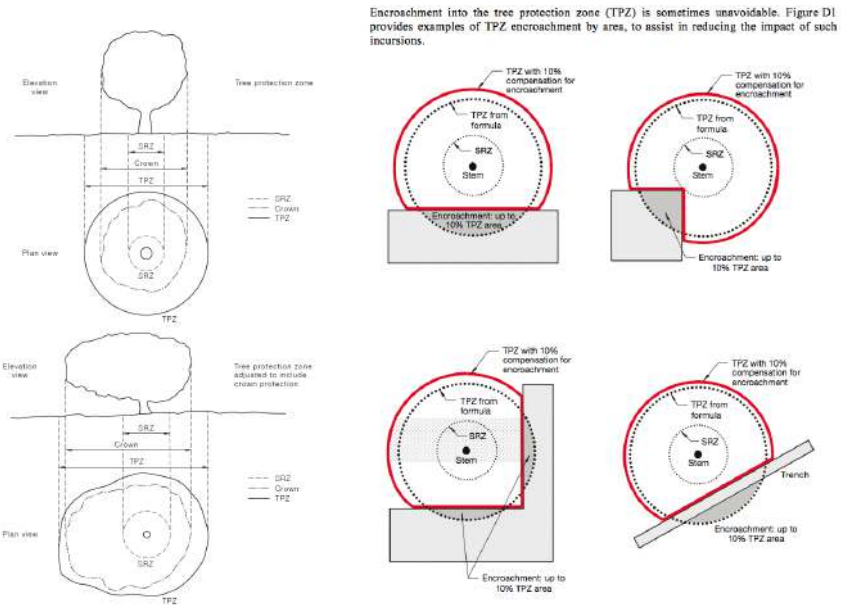
Safe Useful Life Expectancy (SULE) - 1. Long (40+years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.

Amenity Value - Very High/High/Medium/Low/Very Low.

Retention Value: Tree AZ, see appendix 3 for categories.

Appendix 3 - Further Information of Methodology

1. **Tree Protection Zone:** The tree protection zone (TPZ) is the principle means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The radius of the TPZ is calculated for each tree by multiplying its DBH x 12. The derived value is measured in radius from the centre of the stem/trunk at ground level. A TPZ should not be less than 2.0 metres nor greater than 15 metres (except where crown protection is required).
   It is commonly observed that tree roots will extend significant further than the indicative TPZ, however the TPZ is an area identified AS4970-2009 to be extent where root loss or disturbance will generally not impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The tree protection also incorporates the SRZ (see below for more information about the SRZ). I have calculated the TPZ of palms, other monocots, cycads and tree ferns at one metre outside the crown projection. See appendices for additional information about the TPZ including information about calculating the TPZ and examples of TPZ encroachment.
   Minor encroachment into TPZ: Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.
   Major encroachment into TPZ: Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted.



2. **Structural Root Zone:** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always need to be maintained to preserve a viable tree as it will only have a minor effect on the trees vigour and health. There are several factors that determine the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally work within the SRZ should be avoided.
   An indicative SRZ radius can be determined from the diameter of the trunk measured immediately above the root buttresses. Root investigation could provide more information about the extent of the SRZ. The following formula should be used to calculate the SRZ.
   SRZ radius = $(D \times 50)^{0.42} \times 0.64$ (D = Diameter above root buttress).

3. **Tree Age Class:** If can be difficult to determine the age of a tree without carrying out invasive tests that may damage the tree, so we have categorised there likely age class which is defined below;
   - Young/Newly planted: Young or recently planted tree.
   - Semi Mature: Up to 20% of the usual life expectancy for the species.
   - Early mature/Mature: Between 20%-80% of the usual life expectancy for the species.
   - Over mature: Over 80% of the usual life expectancy for the species.
   - Dead: Tree is dead or almost dead.

4. **Health/Physiological Condition:** Below are examples conditions used when assigning a category for tree health.

Category	Example condition	Summary
Good	• Crown has good foliage density for species. • Tree shows no or minimal signs of pathogens that are unlikely to have an effect on the health of the tree. • Tree is displaying good vigour and reactive growth development.	• The tree is in above average health and condition and no remedial works are required.
Fair	• The tree may be starting to dieback or have over 25% deadwood. • Tree may have slightly reduced crown density or thinning. • There may be some discolouration of foliage. • Average reactive growth development. • There may be early signs of pathogens which may further deteriorate the health of the tree. • There may be epicormic growth indicating increased levels of stress within the tree.	• The tree is in below average health and condition and may require remedial works to improve the trees health.
Poor	• The may be in decline, have extensive dieback or have over 30% deadwood. • The canopy may be sparse or the leaves may be unusually small for species. • Pathogens or pests are having a significant detrimental effect on the tree health.	• The tree is displaying low levels of health and removal or remedial works may be required.
Dead	• The tree is dead or almost dead.	• The tree should generally be removed.

5. **Structural Condition:** Below are examples conditions used when assigning a category for structural condition.

Category	Example condition	Summary
Good	• Branch unions appear to be strong with no sign of defects. • There are no significant cavities. • The tree is unlikely to fail in usual conditions. • The tree has a balanced crown shape and form.	• The tree is considered structurally good with well developed form.
Fair	• The tree may have minor structural defects within the structure of the crown that could potentially develop into more significant defects. • The tree may a cavity that is currently unlikely to fail but may deteriorate in the future. • The tree is an unbalanced shape or leans significantly. • The tree may have minor damage to its roots. • The root plate may have moved in the past but the tree has now compensated for this. • Branches may be rubbing or crossing.	• The identified defects are unlikely cause major failure. • Some branch failure may occur in usual conditions. • Remedial works can be undertaken to alleviate potential defects.
Poor	• The tree has significant structural defects. • Branch unions may be poor or weak. • The tree may have a cavity or cavities with excessive levels of decay that could cause catastrophic failure. • The tree may have root damage or is displaying signs of recent movement. • The tree crown may have poor weight distribution which could cause failure.	• The identified defects are likely to cause either partial or whole failure of the tree.

6. **Amenity Value:** To determine the amenity value of a tree we assess a number of different factors, which include but are not limited to the information below.
   - The visibility of the tree to adjacent sites.
   - The relationship between the tree and the site.
   - Whether the tree is protected by any statuary conditions.
   - The habitat value of the tree.
   - Whether the tree is considered a noxious weed species.

   The amenity value is rated using one of the following values.
   - Very High
   - High
   - Moderate
   - Low
   - Very Low

7. **Safe Useful Life Expectancy (SULE), (Barrel, 2001):** A trees safe useful life expectancy is determined by assessing a number of different factors including the health and vitality, estimated age in relation to expected life expectancy for the species, structural defects, and remedial works that could allow retention in the existing situation.

Category	Description
1. Long - Over 40 years	(a) Structurally sound trees located in positions that can accommodate future growth. (b) Trees that could be made suitable for retention in the long term by remedial tree care. (c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.
2. Medium - 15 to 40 years	(a) Trees that may only live between 15 and 40 more years. (b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that could be made suitable for retention in the medium term by remedial tree care.
3. Short - 5 to 15 years	(a) Trees that may only live between 5 and 15 more years. (b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.
4. Remove - Under 5 years	(a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions. (b) Dangerous trees because of instability or recent loss of adjacent trees. (c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form. (d) Damaged trees that are clearly not safe to retain. (e) 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. (f) Trees that are damaging or may cause damage to existing structures within 5 years. (g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f). (h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.
5. Small/Young	(a) Small trees less than 5m in height. (b) Young trees less than 15 years old but over 5m in height. (c) Formal hedges and trees intended for regular pruning to artificially control growth.

8. **Root investigations:** The root investigations should identify roots greater than 30mm in diameter that are located along the edge of the structures footprint or in the location of footings. Root investigations must be carried out using non-invasive methods (manual excavations). Any excavations for the root investigations must carried out manually to avoid damaging the roots during excavations. Manual excavation may include the use of a high-pressure air/air knife, or a combination of high-pressure water and a vacuum device. When hand excavating carefully work around roots retaining as many as possible. Take care to not fray, wound, or cause damage to any roots during excavations as this may cause decay or infection from pathogens. It is essential that exposed roots are kept moist and the excavation back filled as soon as possible. The root investigations should be carried out by a qualified Arborist minimum AQF3. Once roots are exposed, a visual assessment can be carried out by a consulting Arborist to evaluate the potential impact of the proposed root loss on the health and stability of the tree. A root map/report should be prepared identifying the findings of investigations, including photographs as supporting evidence in the report.

9. **Retention Value:** The system I have used to award the retention value is Tree AZ. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The table below provides a brief description of each category.

TreeAZ Categories (Version 10.04-ANZ)

CAUTION: TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure	
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people	
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

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Glossary of Terms

Abiotic - Pertaining to non-living agents; e.g. environmental factors

Adventitious shoots - Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage - The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Bark - A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Branch:
• **Primary**. A first order branch arising from a stem
• **Lateral**. A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
• **Sub-lateral**. A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Branch collar - A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

Brown-rot - A type of wood decay in which cellulose is degraded, while lignin is only modified

Buckling - An irreversible deformation of a structure subjected to a bending load

Buttress zone - The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

Cambium - Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Canker - A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

Compartmentalisation - The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compressive loading - Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition - An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Crown/Canopy - The main foliage bearing section of the tree

Crown lifting - The removal of limbs and small branches to a specified height above ground level

Crown thinning - The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

Crown reduction/shaping - A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

DAB (Diameter Above Buttress) - Trunk diameter measured above the root buttress

Defect - In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Dieback - The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease - A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Dominance - In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

Dormant bud - An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction - In woody tissues, the loss of physiological function, especially water conduction, in sapwood

DBH (Diameter at Breast Height) - Stem diameter measured at a height of 1.4 metres or the nearest measurable point. Where measurement at a height of 1.4 metres is not possible, another height may be specified

Deadwood - Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

Epicormic shoot - A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Flush-cut - A pruning cut which removes part of the branch bark ridge and or branch-collar

Girdling root - A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

Habit - The overall growth characteristics, shape of the tree and branch structure

Hazard beam - An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

Heartwood/false-heartwood - The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

Heave - A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

Included bark (ingrown bark) - Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

Lever arm - A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

Lignin - The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

Lions tailing - A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end- loading

Loading - A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Mycelium - The body of a fungus, consisting of branched filaments (hyphae)

Occlusion - The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen - A micro-organism which causes disease in another organism

Photosynthesis - The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products

Probability - A statistical measure of the likelihood that a particular event might occur

Pruning - The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Radial - In the plane or direction of the radius of a circular object such as a tree stem

Reactive Growth/Reaction Wood - Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Ring-barking - The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

Root-collar - The transitional area between the stem/s and roots

Sapwood - Living xylem tissues

Soft-rot - A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Stem/s - Principle above-ground structural component(s) of a tree that supports its branches

Stress - In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

SRZ (Structural Root Zone) - The area around the base of the tree required for the trees stability in the ground

Subsidence - In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

Taper - In stems and branches, the degree of change in girth along a given length

Targets - In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

Topping - In arboriculture, the removal of the crown of a tree, or of a major proportion of it

Transpiration - The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

TPZ (Tree Protection Zone) - A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development

Understory - This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

Veteran tree - Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem

Vigour - The expression of carbohydrate expenditure to growth (in trees)

White-rot - A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

Wind exposure - The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

Wind pressure - The force exerted by a wind on a particular object

Windthrow - The blowing over of a tree at its roots

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

Appendix B – Urban Arbor - Arboricultural Report Sydney Trains Service Relocation Addendum

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Arboricultural Report:

SMEW Tree Report Addendum – Sydney Trains Service Relocations

Site Location: Southwest Metro, Dulwich Hill, Canterbury, Lakemba, Wiley Park and Punchbowl, NSW

Prepared for:
John Holland Laing O'Rourke

Prepared by: Bryce Claassens
Urban Arbor Pty Ltd
Date prepared: 16 March 2021
Ref: 210316-SMEW-AIA
Rev: 3

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1. INTRODUCTION

1.1 Urban Arbor have been instructed by John Holland Laing O'Rourke to provide an Arboricultural Report for trees located at the site and adjoining sites in relation to the proposed Sydney Trains Service Relocation works. This report is an addendum to the SMEW Tree Report by Urban Arbor, dated 17 September 2020. The report is to address trees to be removed or pruned within specific areas at the site and to specify tree protection requirements for trees to be retained.

1.2 Documents and information provided to assist in preparing the report;

A) Infrastructure Approval, NSW Government Planning & Environment, 12 December 2018, Condition of Approval – SSI 8256.
B) Compilation of Revised Mitigation Measures, Transport for NSW, LV12 – Impact to trees, no date shown.
C) 03 MWA – Veg Prune and Clear Table, John Holland Laing O'Rourke, Page 1 – 33, 23 February 2021.
D) 00 Lak & Cant – Veg Prune and Clear Table, John Holland Laing O'Rourke, Page 1 – 8, 14 December 2020.
E) SMC – Tree Prune and Clearing Mark-up, John Holland Laing O'Rourke, Page 1 – 10, 23 November 2020.
F) Appendix D12_SWTC1.6 Early Works Mark-up, John Holland Laing O'Rourke, Page 1 – 13, No date shown.
G) SMEW Tree Report, Urban Arbor Pty Ltd, Ref: 200917-SWM-AIA, Rev: H, 17 September 2020.
H) Bowls Club Lease Gazette, Government Gazette of the state of New South Wales, Number 290 – Compulsory Acquisitions, 23 December 2020.

1.3 The site and tree inspections were completed on 6 November 2020, 9 December 2020, 12 February 2021 and 17 February 2021. Some trees included within this report were previously inspected between the dates of 6 January 2020 to 3 April 2020 during the Southwest Metro Rail Corridor (Marrickville to Bankstown) works. Access was available to the subject site and adjoining public areas only.

1.4 This report has been divided into two separate parts including Part 1 and Part 2. Part 1 of the report includes pages 1 – 46. Part 2 of the report includes pages 47 – 85 as well as the Appendices.

2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct a visual assessment of all significant trees located within the area identified for assessment by John Holland Laing O'Rourke. For the purpose of this report, a significant tree is a 'Long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks'.

2.1.2 Determine the trees estimated contribution years and remaining, useful life expectancy and award the trees a retention value.

2.1.3 Determine trees that are to be removed or retained within each area.

2.1.4 Specify tree protection measures for trees to be retained in accordance with AS4970-2009.

2.1.5 Provide pruning specifications for trees where required, in accordance with AS4373-2007.

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3. LIMITATIONS

3.1 The observations and recommendations are based on the site inspections identified in section 1 only. The findings of this report are based on the observations and site conditions at the time of inspection.

3.2 All of the observations were carried out from ground level. The accuracy of the assessment of the subject trees structural condition and health is limited to the visibility of the tree at the time of inspection.

3.3 The tree inspection was visual from ground level only. No soil or tissue testing was carried out as part of the tree inspection. None of the surrounding surfaces adjacent to trees were lifted or removed during the tree inspections.

3.4 Root decay can sometimes be present with no visual indication above ground. It is also impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation. Any form of tree failure due to these activities is beyond the scope of this assessment.

3.5 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.6 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with an *spp*.

3.7 Some trees included within this report have been located using a Trimble TDC100 hand held GNSS device by Urban Arbor Pty Ltd. Tree locations are only accurate within 1m - 3m. If an accurate location of the trees is required, a registered surveyor should locate the trees.

3.8 All diagrams, plans and photographs included in this report are visual aids only, and are not to scale unless otherwise indicated.

3.9 Alteration of this report invalidates the entire report.

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4. METHODOLOGY

4.1 The following information was collected during the assessment of the subject tree(s).

4.1.1 Tree common name
4.1.2 Tree botanical name
4.1.3 Tree age class
4.1.4 DBH (Trunk/Stem diameter at breast height/1.4m) - millimetres.
4.1.5 Estimated height - metres
4.1.6 Estimated crown spread (diameter of crown) - metres
4.1.7 Health
4.1.8 Structural condition
4.1.9 Amenity value
4.1.10 Estimated remaining contribution years (SULE)[1]
4.1.11 Retention value (Tree AZ)[2]
4.1.12 Notes/comments

4.2 An assessment of the trees condition was made using the visual tree assessment (VTA) model (Mattheck & Breloer, 1994).[3]

4.3 Tree diameter was measured using a DBH tape or in some cases estimated. Tree height and tree canopy spread was measured with a clinometer or in some cases estimated. All other measurements were estimations unless otherwise stated. The other tools used during the assessment were a nylon mallet, compass, camera and a steel probe.

4.4 All information was imported into our computerised geographical information system (GIS) PT-mapper pro. This software was used to measure/calculate all encroachment estimates included in this report.

4.5 All DBH measurements, tree protection zones, and structural root zones were calculated in accordance with methods set out in AS4970 Protection of trees on development sites (2009).[4]

4.6 Details of how the observations in this report have been assessed are listed in the appendices.

[1] Barrell, J. (2001), *'SULE: Its use and status in the new millennium' in Management of Mature Trees proceedings of the 4th NAAA Workshop*, Sydney, 2001. Barrell.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

[4] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

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5. SITE LOCATION AND BRIEF DESCRIPTION

5.1 The area covered in the site inspections is located within two Local Government Areas (LGA), including Inner West LGA and Canterbury Bankstown LGA. All trees within the Inner West LGA are subject to protection under the corresponding Local Environmental Plans (LEP)[5], Development Control Plans (DCP)[6] and Tree Management DCP 2020.[7] All trees within the Canterbury Bankstown LGA are subject to protection under the former governing Canterbury LEP 2012[8], Canterbury DCP 2012[9], Bankstown LEP 2015[10] and Bankstown DCP 2015.[11]

6. GENERAL INFORMATION IN RELATION TO PROTECTING TREES ON DEVELOPMENT SITES

6.1 **Tree protection zone (TPZ):** The TPZ is the principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified in AS4970-2009 to be the area where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The TPZ also incorporates the SRZ (see below for more information about the SRZ). The TPZ is calculated by multiplying the DBH by twelve, with the exception of palms, other monocots, cycads and tree ferns, the TPZ of which have been calculated at one metre outside the crown projection. Additional information about the TPZ is included in appendix 3.

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5 *Inner West Local Environmental Plans*, https://www.innerwest.nsw.gov.au/develop/planning-controls/local-environment-plans-lep, accessed 4 March 2021.

6 *Inner West Development Control Plans*, https://www.innerwest.nsw.gov.au/develop/planning-controls/current-development-control-plans-dcp , accessed 4 March 2021.

7 *Inner West Tree Management Development Control Plan 2020*, https://www.innerwest.nsw.gov.au/live/information-for-residents/trees/trees-on-your-property-pruning-or-removing, accessed 4 March 2021.

8 *Canterbury Local Environmental Plan 2012*, https://www.legislation.nsw.gov.au/#/view/EPI/2012/673, accessed 4 March 2021.

9 *Canterbury Development Control Plan 2012*, https://www.cbcity.nsw.gov.au/development/planning-control-policies/canterbury-development-control-plan-2012, accessed 4 March 2021.

10 *Bankstown Local Environmental Plan 2015*, https://www.legislation.nsw.gov.au/#/view/EPI/2015/140/full, accessed 4 March 2021.

11 *Bankstown Development Control Plan 2015,* https://www.cbcity.nsw.gov.au/resident/trees-garden-home/pruning-removing-trees/tree-preservation-order, accessed 4 March 2021.

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6.2 **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. The SRZ is calculated using the following formula; (DAB x 50) $^{0.42}$ x 0.64. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally, work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ. See the appendices for more information about the SRZ.

6.3 **Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

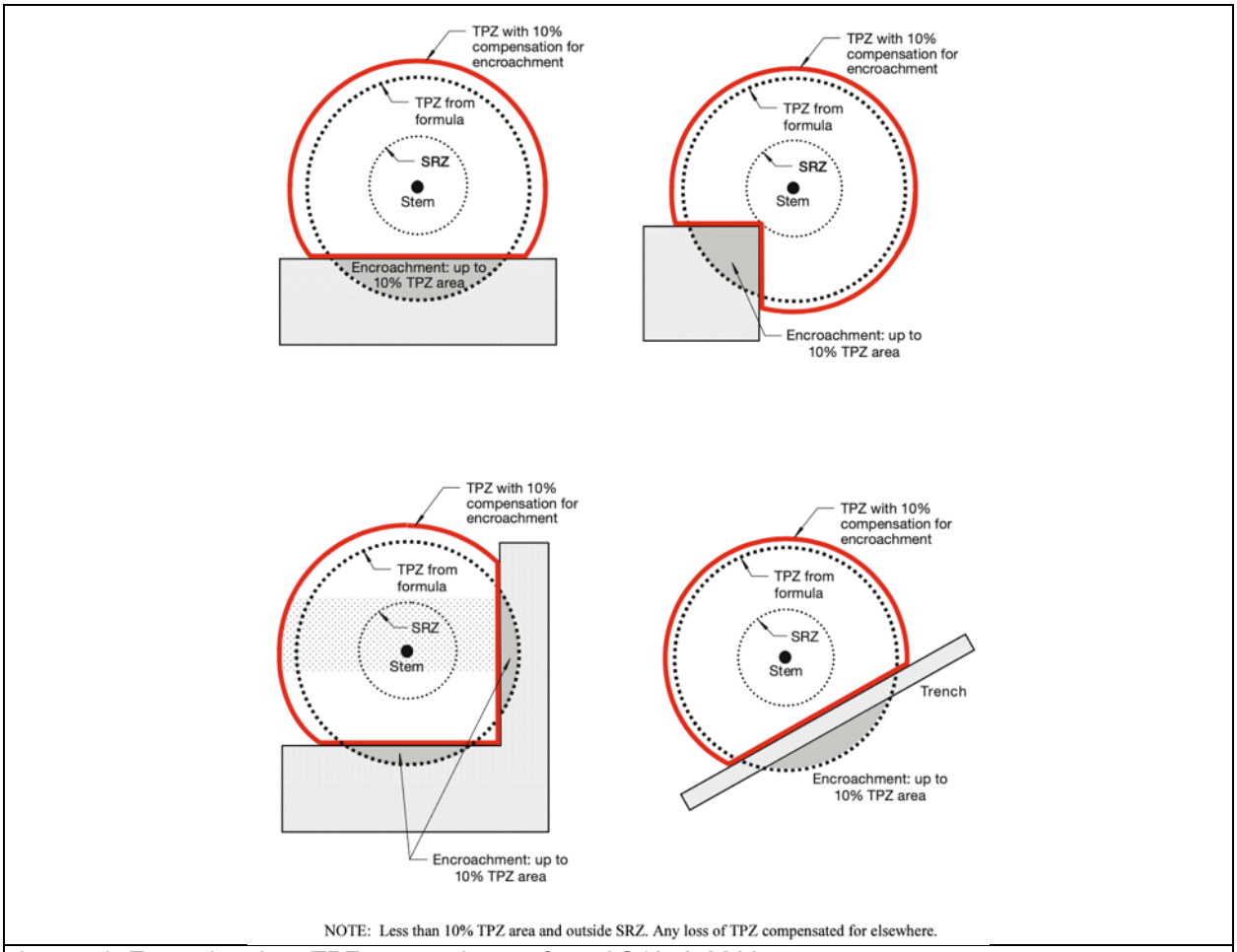

Image 1: Example minor TPZ encroachment from AS4970-2009.

6.4 **Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted. Root investigations may be required to identify roots that will be impacted during major TPZ encroachment (see appendix 3 for more information in relation to root investigations).

7. SITE LOCATION

7.1 The areas assessed in this report have been identified by John Holland Laing O'Rourke and have been listed below. Urban Arbor carried out a site inspection to identify significant trees within each area. In appendix 1 several site plans have been included that identify the location of the significant trees that were identified in each area. The tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans in appendix 1. The following areas were assessed for significant trees that could potentially be impacted by the proposed development;

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 4a
- Zone 5
- Zone 6
- Zone 7
- Zone 8
- Zone 9
- Zone 9a
- Zone 9b
- Zone 10
- Zone 11
- Zone 12
- Zone 13
- Zone 14
- Zone 14a
- Zone 14b
- Zone 15
- Zone 15a
- Zone 15b
- Zone 15c
- Zone 15d
- Zone 16
- Zone 16a
- Zone 17
- Zone 17a
- Zone 17b
- Zone 17c
- Zone 18a
- Zone 18b
- Zone 19
- Zone 20a
- Zone 20b
- Zone20c
- Zone 21
- Zone 22
- Zone 23a
- Zone 23b
- Zone 24
- Zone 25
- Zone 26

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8. TREE OBSERVATIONS

8.1 **Tree information:** Details of each individual tree assessed, including the observations taken during the site inspection, can be found in the tree inspection schedule in appendix 2, where the indicative tree protection zone (TPZ) and Structural Root Zone (SRZ) has been calculated for each of the subject trees. The TPZ and SRZ should be measured in radius from the centre of the trunk. Each of the subject trees have been awarded a retention value based on the observations using the Tree AZ method. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The Tree AZ categories sheet (Barrell Tree Consultancy) has been included in appendix 3 to assist with understanding the retention values. The retention value that has been allocated to the subject trees in this report is not definitive and should only be used as a guideline.

9. ASSESSMENT OF TREE IMPACTS BY AREA

9.1 The below tables include trees and other *vegetation* - refer to the notes column in Appendix 2 for classification. *Vegetation* has been identified at the discretion of Urban Arbor to meet the requirements of Condition of Approval E5 and includes shrubs and some exotic species but does not include small insignificant weed species and grasses. Totals derived for replacement planting include trees only, as defined by the *NSW Government Planning & Environment, 12 December 2018, Condition of Approval – E5, SSI 8256*.

9.2 The trees and *vegetation* included in the following sections have been identified by John Holland Laing O'Rourke as being subject to impacts from development works. All trees to be retained should be protected in accordance with AS4970-2009, details of which are included in section 12. If there are any development works that have not been assessed and could potentially impact additional trees, the project arborist must assess the impact of the proposed works to the condition of the trees, determining the trees viability for retention.

9.3 **Zone 1 – Dulwich Hill Station (North side):** *Vegetation* in this area requires crown pruning to allow for the intersection of a new GST trough. The pruning is to provide adequate clearance for the proposed works area. The following group of *vegetation* has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
G27	*Mixed species*	5. Small/Young	Z3	2.0	12.6	1.5	Exotic	Very Low

Image 1: Looking Southwest towards *vegetation* within G27 (Mixed species weeds). The *vegetation* within this area requires clearance pruning (hatched yellow) around the GST to allow for the proposed works area.

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9.4 **Zone 2– Dulwich Hill Station (North side):** The trunk of the tree within this area is in contact with the existing GST. The trunk of the tree will be located within the footprint of the proposed relocation of assets. The tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3276	*Casuarina cunninghamiana*	1. Long	A1	2.0	12.6	1.8	Native	Medium

Image 2: Looking East towards tree 3276. Tree removal is recommended to accommodate the development.

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9.5 **Zone 3 – Dulwich Hill Station (North side):** The only works proposed within this area include the maintenance of grass and insignificant small weeds by whipper snip and mow. No *vegetation* or tree removal is required within this area. No *vegetation* or tree pruning is required within this area.

Image 3: Looking West towards Zone 3. No tree removal or pruning will be required within this area.

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9.6 **Zone 4 – Dulwich Hill Station (North side):** Trees in this area require crown pruning to allow for heavy vehicle access for hydro-vac excavation truck works (NDD testing for a new GST section). The pruning is to provide 4.5 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3069	*Casuarina cunninghamiana*	1. Long	A1	5.2	83.6	2.5	Native	High
3292	*Casuarina cunninghamiana*	1. Long	A1	6.5	132.7	2.7	Native	High

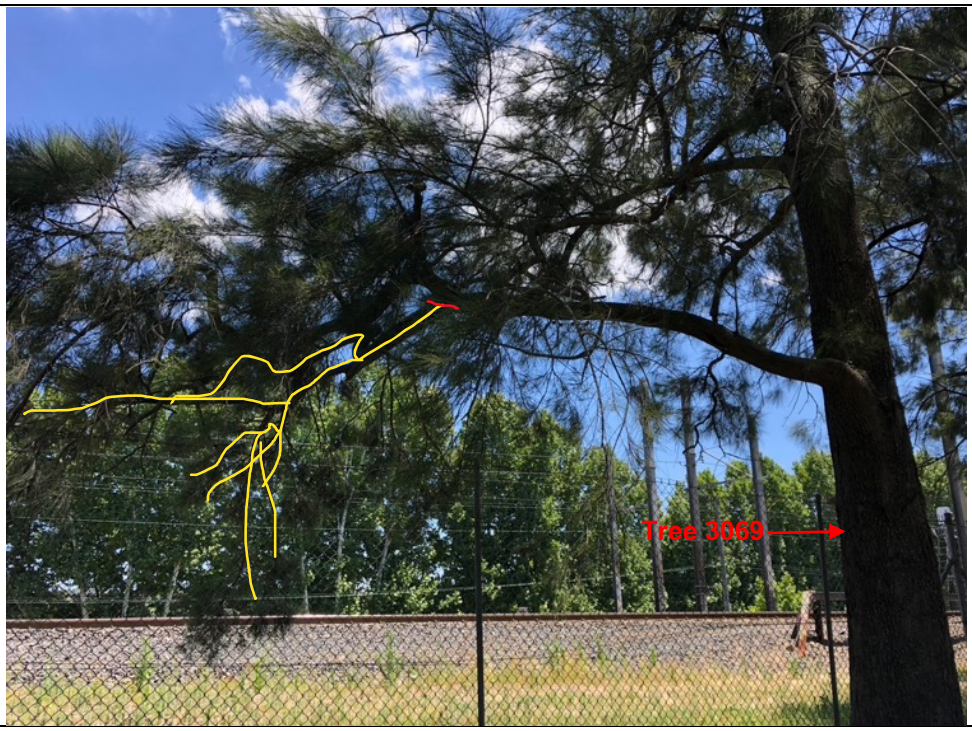

Image 4: Looking Southwest towards tree 3069 showing required pruning for vehicle access. The 120mm diameter second order branch to the Southeast at 2m above existing ground is to be removed. Branch marked yellow, pruning cut marked red.

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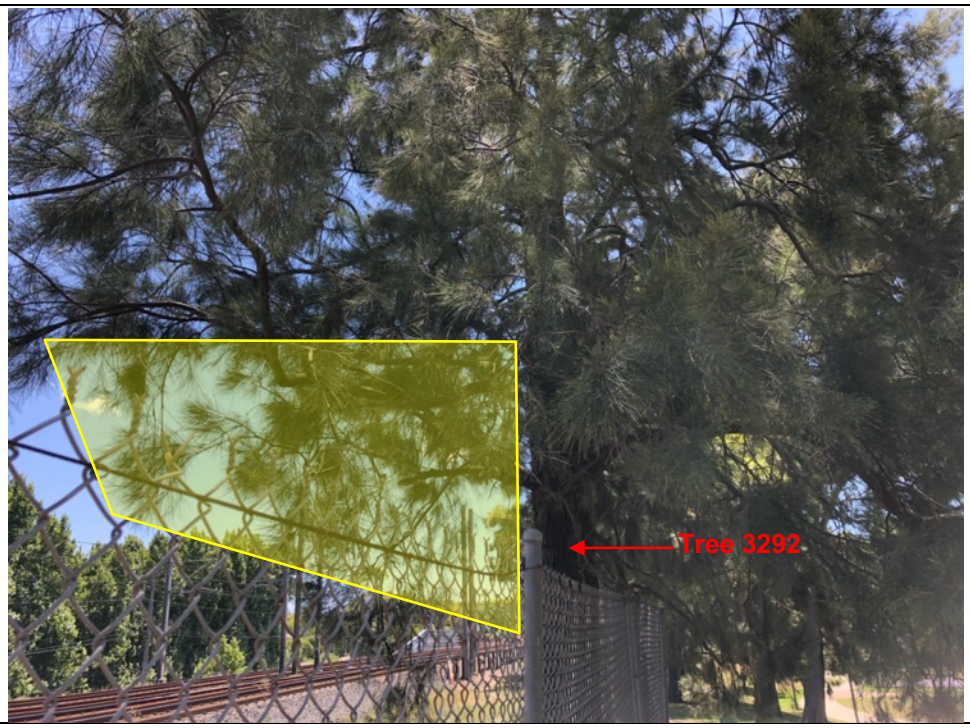

Image 5: Looking Southwest towards tree 3292 showing required pruning for vehicle access. The area hatched yellow is to be crown raised to a height of 4.5m above ground level. The pruning will result in the removal of approximately 10% of the overall live foliage area and will not significantly impact the tree.

9.7 **<u>Zone 4a – Dulwich Hill Station (South side):</u>** The installation of a new GST will be located along the toe of the existing batter and will not significantly impact trees adjacent to this area. No *vegetation* or tree removal is required within this area. No *vegetation* or tree pruning is required within this area.

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9.8 **Zone 5 – Dulwich Hill Hi-rail Access Pad Area (South side):** One tree (115) located in this area requires crown pruning to allow for the installation of a new transition pit. The pruning is to provide adequate clearance for the proposed works area. One *vegetation* (3293) requires removal to allow for the installation of the new transition pit. The following tree and *vegetation* have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
115	*Acacia parramattensis*	2. Medium	A1	3.1	30.2	2.1	Native	Medium
3293	*Acacia parramattensis*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Very Low

Image 6: Looking Northeast to tree 115 and *vegetation* 3293. Canopy pruning is required for tree 115. The area hatched yellow is to be crown raised to a height of 3m above ground level. The pruning will result in the removal of less than 5% of the overall live foliage area and will not significantly impact the tree. *Vegetation* 3293 is to be removed to accommodate the proposed transition pit.

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9.9 **<u>Zone 6 – Dulwich Hill Hi-rail Access Pad Area (South side):</u>** *Vegetation* in this area will be located directly adjacent to a proposed services trench. The *vegetation* is to be removed to accommodate the development. The following *vegetation* has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3294	*Triadica sebifera*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Very Low

Image 7: Looking Northeast to *vegetation* 3294. *Vegetation* 3294 is to be removed to accommodate the proposed services trench.

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9.10 **Zone 7 – Wiley Park Station (North side):** The tree within this area requires crown pruning to provide working space for crews during the installation of a new services trench/GST. The canopy pruning will result in the removal of less than 5% of the overall live foliage area and is considered acceptable. The following tree has been identified for pruning in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
684	*Pittosporum undulatum*	5. Small/Young	Z1	2.2	14.7	1.7	Native	Low

Image 8: Looking West towards tree 684 showing required pruning for work crew access. Clearance pruning is required to provide 1m of space from the existing white fence to the North of the tree (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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9.11 **Zone 8 – Wiley Park Station (North side):** The tree in this area require crown pruning to allow for heavy vehicle access for the installation of a new service trench. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. Remaining works proposed within this area include the maintenance of grass and insignificant small weeds by whipper snip and mow. No *vegetation* or tree removal is required within this area. The following tree has been identified for pruning in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
692	*Schinus molle*	1. Long	A1	12.6	498.8	3.6	Exotic	Medium

Image 9: Looking Southeast towards tree 692, showing required pruning for vehicle access (hatched yellow). Minor tip pruning to the North of the tree is required to allow 4.5m clearance for vehicle access. The pruning will result in removing less than 10% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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9.12 **Zone 9 – Wiley Park Station (North side):** The trees within this area are located within the footprint or directly adjacent to the proposed services trench. Therefore, the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
693	*Triadica sebifera*	2. Medium	A1	3.3	34.7	2.4	Exotic	Medium
694	*Triadica sebifera*	1. Long	A1	4.1	52.3	2.3	Exotic	Medium

Image 10: Looking Southeast towards tree 693 and 694. Both trees are recommended for removal due to the proposed services trench (dashed red).

9.13 **Zone 9a – Wiley Park Station (North side):** The installation of the proposed service trench in this location zone will be located up the batter and away from the existing vegetation and trees. No *vegetation* or tree removal is required within this area. No *vegetation* or tree pruning is required within this area.

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9.14 **Zone 9b – Wiley Park Station (North side/lower section):** The trees within this area are located within the footprint or directly adjacent to the proposed services trench. The proposed trench is to be excavated to a depth of 900mm within the SRZ, indicating the stability of the trees will be impacted. Therefore, the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3286	*Eucalyptus saligna*	3. Short	Z10	7.1	158.4	2.8	Native	High
3287	*Eucalyptus botryoides*	3. Short	Z10	6.6	136.8	2.6	Native	High
3288	*Eucalyptus scoparia*	3. Short	Z10	4.8	72.4	2.4	Native	High

Image 11: Looking South towards tree 3286 and 3287. Both trees are recommended for removal due to the proposed services trench (dashed red).

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Image 12: Looking South towards tree 3288. The tree is recommended for removal due to the proposed services trench (dashed red).

9.15 **<u>Zone 10 – Punchbowl Station (North side):</u>** The trees within this area require crown pruning to provide vehicle clearance and working space for crews during the installation of a new transition pit for services. The following trees have been identified for pruning in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
724	*Lophostemon confertus*	1. Long	A1	4.9	75.4	2.4	Native	Medium
727	*Corymbia citriodora*	3. Short	Z10	3.9	47.8	2.4	Native	Medium
3296	*Acacia spp*	2. Medium	A1	3.0	28.3	1.8	Native	Medium

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Image 13: Looking Southeast towards tree 3296, showing required pruning for vehicle access (hatched yellow). The pruning will result in removing less than 10% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

Image 14: Looking South towards tree 724, showing required pruning for vehicle access (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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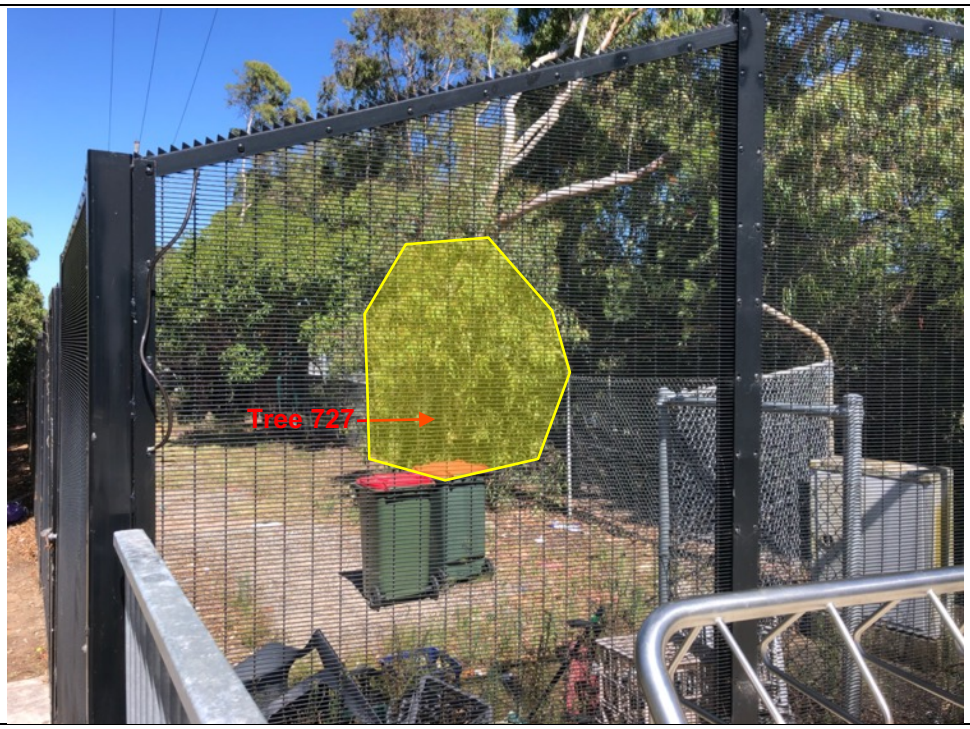

Image 15: Looking Southeast towards tree 727, showing required pruning for vehicle access (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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9.16 **Zone 11 – Punchbowl Station (North side):** The tree within this area is located directly adjacent to the proposed services trench. The proposed trench is to be completed within the SRZ, indicating the stability of the tree will be impacted. Therefore, the tree is to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
731	*Lophostemon confertus*	1. Long	A1	6.1	116.9	2.6	Native	High

Image 16: Looking South towards tree 731. The tree is recommended for removal due to the proposed services trench (dashed red).

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9.17 **Zone 12 – Punchbowl Traction Substation:** The trees in this area require crown pruning to allow for heavy vehicle access for the installation of a new service trench. The pruning is to provide 4.5 metre of clearance below the canopy of the tree. Remaining works proposed within this area include the maintenance of grass and insignificant small weeds by whipper snip and mow. No *vegetation* or tree removal is required within this area. The following trees have been identified for pruning in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
1299	*Eucalyptus microcorys*	1. Long	A1	5.9	109.4	2.6	Native	High
1300	*Eucalyptus microcorys*	1. Long	A1	10.1	320.5	3.3	Native	High

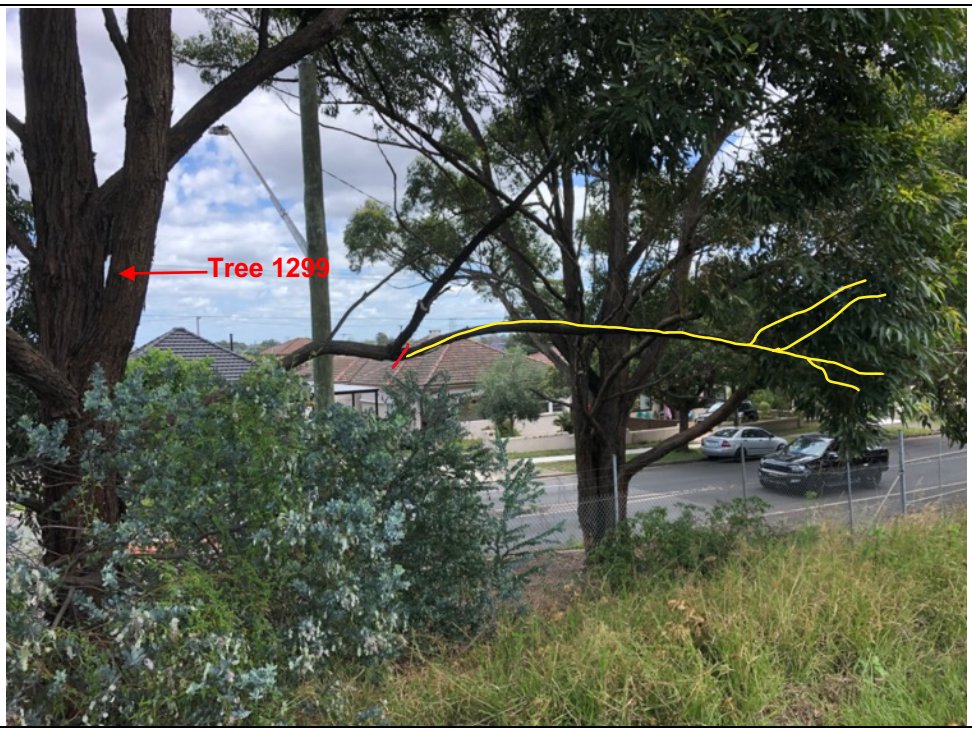

Image 17: Looking Southwest to tree 1299 showing required pruning for construction access. The 80mm diameter second order branch to the West at 2m above existing ground is to be removed. Branch marked yellow, pruning cut marked red.

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Image 18: Looking Southwest to tree 1300 showing required pruning for construction access. The 150mm diameter primary branch to the North at 2.5m above existing ground is to be removed. The 250mm diameter primary branch to the North at 2m above existing ground is to be removed. Branches marked yellow, pruning cuts marked red.

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9.18 **Zone 13 – Lakemba Station (East side – down track):** Trees in this area require crown pruning to allow for heavy vehicle access for the delivery of engineered fill material, removal of spoil stockpiles and additional plant & equipment laydown to install ULX. The pruning is to provide 4.5 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
950	*Lophostemon confertus*	1. Long	A1	4.3	58.6	2.4	Native	Medium
951	*Lophostemon confertus*	1. Long	A1	4.8	72.4	2.3	Native	Medium

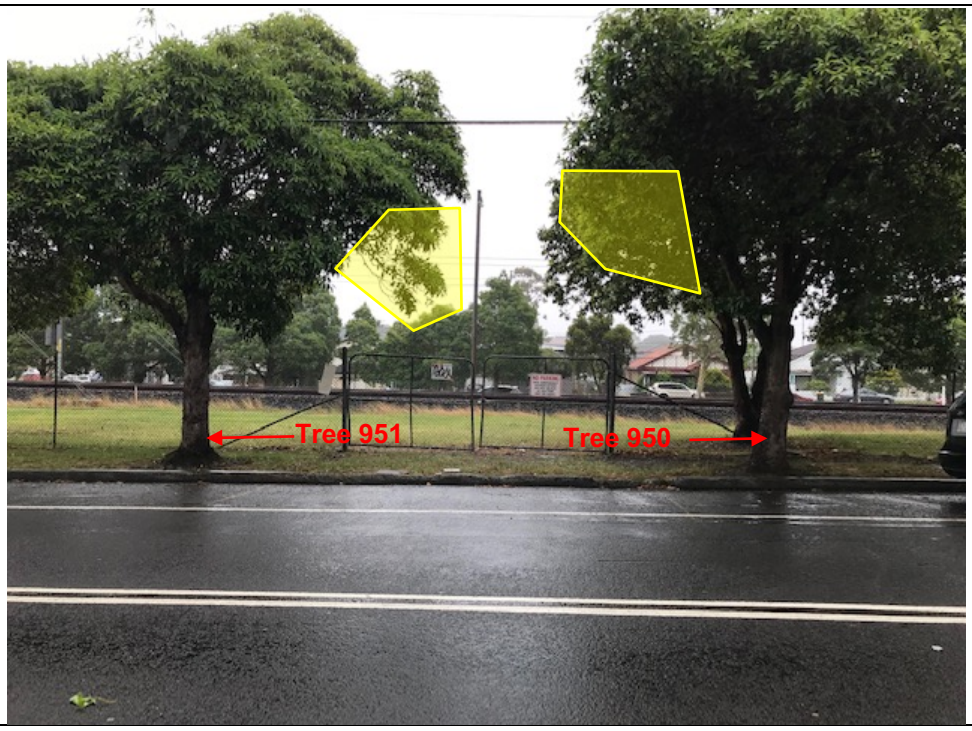

Image 19: Looking North towards tree 950 and 951 showing required pruning for vehicle access (hatched yellow). The pruning will result in removing less than 5% of the overall live foliage area of each tree. Final pruning cuts should not exceed 50mm in diameter.

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9.19 **Zone 14 – Lakemba Station (North side):** The trees within this area are located directly adjacent to the proposed services trench. The proposed trench is to be completed within the SRZ, indicating the stability of the trees will be impacted. Therefore, the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
680	*Corymbia citriodora*	1. Long	A1	4.4	60.8	2.4	Native	High
681	*Lophostemon confertus*	1. Long	A1	7.9	196.1	2.9	Native	High

Image 20: Looking South towards tree 680 and 681. The trees are recommended for removal due to construction impacts from the proposed services trench (dashed red).

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9.20 **Zone 14a – Bridge Victoria Road:** The trees within this area are located adjacent to the proposed piling works. The proposed piling is to be completed within the SRZ of tree 3375, indicating the stability of the tree will be impacted. Therefore, tree 3375 is to be removed to accommodate the development. Tree 3376 will require canopy pruning to allow for the piling works. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3375	*Morus alba*	2. Medium	Z3	3.4	36.3	2.1	Exotic	Low
3376	*Melaleuca spp*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low

Image 21: Looking towards tree 3375. The tree is recommended for removal due to construction impacts.

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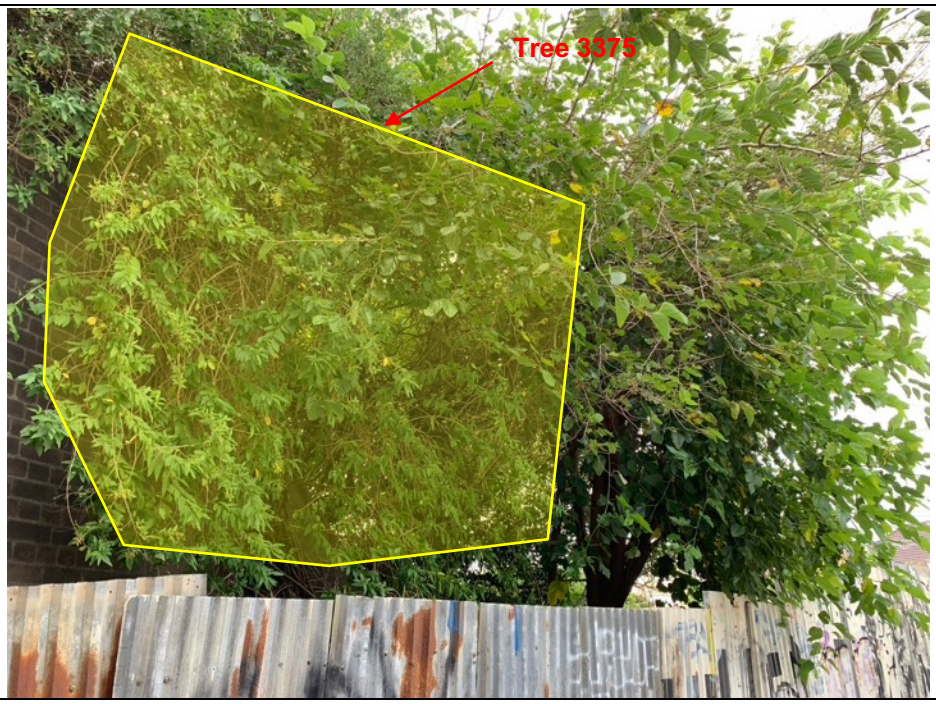

Image 22: Looking East towards tree 3376 showing required pruning for piling works (hatched yellow). The crown is to be reduced by 2m, in line with the brick wall. The pruning will result in removing less than 30% of the overall live foliage area of the tree. Final pruning cuts should not exceed 80mm in diameter.

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9.21 **Zone 14B – Bridge Victoria Road:** The tree within this area is located adjacent to the proposed piling works. Canopy pruning will be required to allow for the piling works – see Image 23. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3216	*Triadica sebifera*	3. Short	Z10	2.2	15.2	1.8	Exotic	Low

Image 23: Looking West towards tree 3216 showing required pruning for piling works (hatched yellow). The crown is to be reduced by 1m, in line with the brick wall. The pruning will result in removing 10% of the overall live foliage area of the tree. Final pruning cuts should not exceed 80mm in diameter.

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9.22 **Zone 15 – Lakemba Station (North side):** The trees within this area are located directly adjacent to the proposed services trench. The proposed trench is to be completed within the SRZ, indicating the stability of the trees will be impacted. Therefore, the trees are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3277	*Eucalyptus microcorys*	1. Long	A1	2.4	18.1	1.8	Native	Medium
3278	*Lophostemon confertus*	1. Long	A1	4.8	72.4	2.4	Native	High
3279	*Eucalyptus microcorys*	1. Long	A1	6.6	136.8	2.9	Native	High
3280	*Lophostemon confertus*	3. Short	Z10	6.1	116.9	2.7	Native	High
3281	*Eucalyptus microcorys*	1. Long	A1	7.0	153.9	2.9	Native	High
3282	*Eucalyptus microcorys*	1. Long	A1	8.9	248.8	3.1	Native	High

Image 24: Looking Southwest towards tree 3277, 3278, 3279, 3280, 3281 and 3282. The trees are recommended for removal due to construction impacts from the proposed services trench (dashed red).

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9.23 **Zone 15a – Bridge Livingstone Ave access to SE abutment:** Trees in this area require crown pruning to allow for heavy vehicle access to enable plant & equipment items to pass between the trees and the GST. The pruning is to provide 4 metre of clearance below the canopy of the trees. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
74	*Quercus robur*	2. Medium	A2	5.4	91.6	2.4	Exotic	Medium
75	*Erythrina crista-galli*	2. Medium	Z3	4.8	72.4	2.3	Exotic	Low

Image 25: Looking West towards tree 74 and 75 showing required pruning for vehicle access (hatched yellow). The North side of the canopy of both trees is to be crown raised by 4m above ground height. The pruning will result in removing 10% of the overall live foliage area of each tree. Final pruning cuts should not exceed 100mm in diameter.

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9.24 **Zone 15b – Bridge Livingstone Road NW Abutment:** The trees within this area are located adjacent to the proposed piling/works are. Tree 3178, 3180 and 3181 will be located within the footprint of the proposed works and are to be removed to accommodate the development. Smaller weed species surrounding the trees are also to be removed to allow for the works area. Tree 3175 and 3179 will require canopy pruning to allow for the works – see Image 26 and 28. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3175	*Fraxinus raywood*	2. Medium	A1	2.0	12.6	1.7	Exotic	Medium
3178	*Acacia decurrens*	3. Short	Z4	2.3	16.6	1.7	Native	Medium
3179	*Cinnamomum camphora*	2. Medium	Z3	3.6	40.7	2.0	Exotic	Low
3180	*Eucalyptus tereticornis*	2. Medium	A2	5.4	91.6	2.6	Native	High
3181	*Fraxinus raywood*	5. Small/Young	Z1	2.0	12.6	1.5	Exotic	Low

Image 26: Looking West towards tree 3175 showing required pruning for works area (hatched yellow). The North side of the canopy is to be raised by 3m. The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter.

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Image 27: Looking Southwest towards tree 3178. The tree is recommended for removal due to construction impacts.

Image 28: Looking South towards tree 3179 and 3180. Showing required pruning for works area for tree 3179 (hatched yellow). The Northeast side of the crown is to be reduced by 1m. The pruning will result in removing less than 5% of the overall live foliage area. Final pruning cuts should not exceed 50mm in diameter. Tree 3180 is recommended for removal due to construction impacts.

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Image 29: Looking Southwest towards tree 3181. The tree is recommended for removal due to construction impacts.

9.25 **Zone 15c – Bridge Livingstone Road SW Abutment:** The only works proposed within this area include the maintenance of grass and insignificant small weeds by whipper snip and mow. No *vegetation* or tree removal is required within this area. No *vegetation* or tree pruning is required within this area.

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9.26 **Zone 15d – Bridge Livingstone Road NE Abutment:** Insignificant small weed species located along the upper embankment will be impacted by the proposed works area and required to be removed. No *vegetation*/tree removal or pruning is required within this area.

Image 30: Looking East towards small weed species on the upper embankment required to be removed to accommodate the development.

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9.27 **Zone 16 – Canterbury Station ((South side – top of pedestrian path):** The tree within this area is located directly adjacent to the proposed GLT trenching and installation. The proposed trench is to be completed within the SRZ, indicating the stability of the tree will be impacted. Therefore, the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3295	*Acacia spp*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low

Image 31: Looking South towards tree 3295. The tree is recommended for removal due to construction impacts from the proposed GLT trench (dashed red).

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9.28 **Zone 16a – Albermarle Road NE and NW Abutments:** The trees within this area are located adjacent to crane activities. Tree 3125 and 3128 will require canopy pruning to allow for the works – see Image 26 and 28. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3125	*Callistemon viminalis*	5. Small/Young	Z1	4.8	72.4	2.3	Native	Low
3128	*Casuarina glauca*	3. Short	Z10	4.8	72.4	2.4	Native	Medium

Image 32: Looking West towards tree 3125 showing required pruning for works area (hatched yellow). The South side of the canopy is to be reduced back to the fence line. The pruning will result in removing less than 10% of the overall live foliage area. Final pruning cuts should not exceed 80mm in diameter.

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Image 33: Looking towards tree 3128 showing required pruning for works area. The first order branch to the Southwest at 2m is to be removed. The yellow line indicates the branch to be removed. The red line indicates the final pruning cut location. The pruning will result in removing approximately 20% of the overall live foliage area.

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9.29 **Zone 17 – Canterbury Station (South side – bottom of pedestrian path):** The tree within this area is located directly adjacent to the proposed GLT trenching and installation. The proposed trench is to be completed within the SRZ, indicating the stability of the tree will be impacted. Therefore, the tree is to be removed to accommodate the development. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
605	*Callistemon viminalis*	2. Medium	A1	2.9	26.4	2.8	Native	Medium

Image 34: Looking South towards tree 3295. The tree is recommended for removal due to construction impacts from the proposed GLT trench (dashed red).

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9.30 **Zone 17a – Bridge Melford Street NW Abutment:** The trees within this area are located adjacent to the proposed piling/works area. Tree 2869 will be located within the footprint of the proposed works and is to be removed to accommodate the development. Tree 2868 will require canopy pruning to allow for the works – see Image 35. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2868	*Leptospermum petersonii*	2. Medium	A2	3.7	43.0	2.4	Native	Medium
2869	*Acacia spp*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low

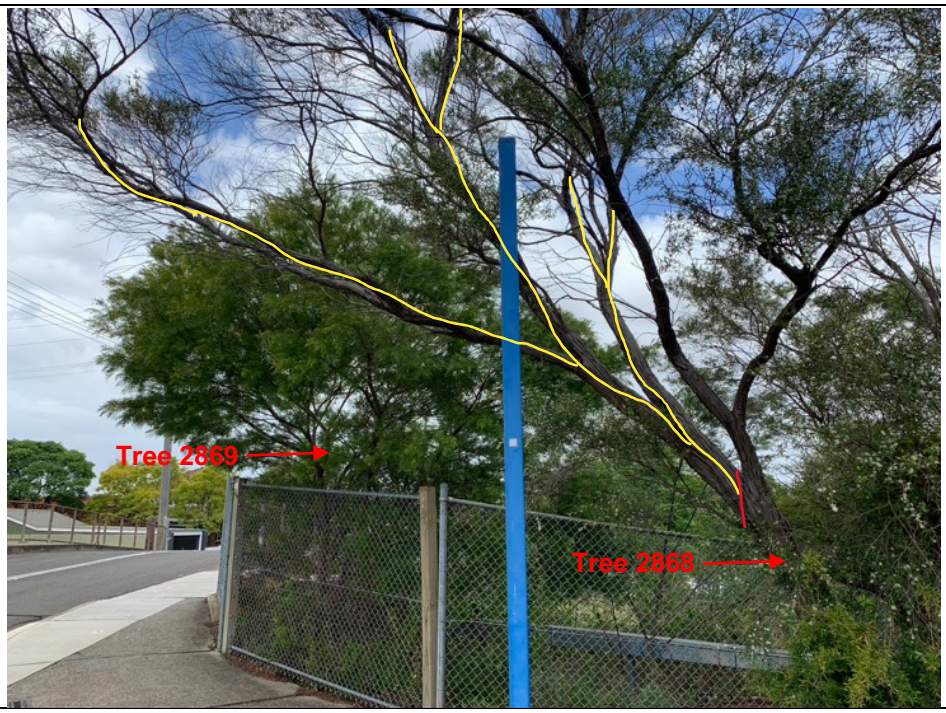

Image 35: Looking South towards tree 2868 and 2869. Showing the required pruning for tree 2868. The 200mm first order branch to the East at 1m is to be removed. The yellow line indicates the branch to be removed. The red line indicates the final pruning cut location. The pruning will result in removing approximately 40% of the overall live foliage area. Tree 2869 is recommended for removal due to construction impacts.

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9.31 **Zone 17b – Bridge Melford Street NE Abutment:** The trees within this area are located adjacent to the proposed piling/works area. Tree 2872 will be located within the footprint of the proposed works and is to be removed to accommodate the development. Smaller insignificant weed species adjacent to the fence are also to be cleared to accommodate the development. Tree 2870 and 2871 will require canopy pruning to allow for the works – see Image 36. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2870	*Jacaranda mimosifolia*	2. Medium	A1	3.0	28.3	2.0	Native	Medium
2871	*Nerium oleander*	5. Small/Young	Z1	3.0	28.3	1.8	Exotic	Low
2872	*Callistemon viminalis*	4. Remove	Z5	2.6	21.2	1.9	Native	Medium

Image 36: Looking East towards tree 2870, 2871 and 2872. Showing the required pruning for tree 2870 and 2871 (hatched yellow). The South side of the crown of tree 2870 and 2871 is to be reduce by 1m. The pruning will result in removing approximately 10% of the overall live foliage area of each tree. Tree 2872 is recommended for removal due to construction impacts.

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9.32 **Zone 17c – Bridge Melford Street SW Abutment:** The tree within this area is located adjacent to the proposed piling/works area. Tree 257 will require canopy pruning to allow for the works – see Image 37. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
257	*Jacaranda mimosifolia*	2. Medium	A1	4.8	72.4	2.4	Exotic	Medium

Image 37: Looking Southwest towards tree 257 showing the required pruning (hatched yellow). The North side of the crown is to be raised by 4m. The pruning will result in removing approximately 10% of the overall live foliage area. Final pruning cuts should not exceed 80mm in diameter.

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9.33 **Zone 18a – Church Street NW Abutment:** The trees within this area are located adjacent to the proposed piling/works area. Tree 2817 and 2818 will be located within the footprint of the proposed works and are to be removed to accommodate the development. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2817	*Melaleuca armillaris*	2. Medium	A1	4.3	58.1	2.6	Native	Medium
2818	*Melaleuca armillaris*	3. Short	Z9	3.9	47.8	2.5	Native	Medium

Image 38: Looking towards tree 2817 and 2818. Tree 2817 and 2818 are recommended for removal due to construction impacts.

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9.34 **Zone 18b – Church Street NW Abutment:** The trees within this area are located adjacent to the proposed piling/works area. Tree 2819 and 2820 will require canopy pruning to allow for the works – see Image 39. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2819	*Pittosporum undulatum*	2. Medium	A1	2.0	12.6	1.6	Native	Medium
2820	*Callistemon viminalis*	5. Small/Young	Z1	2.0	12.6	2.0	Native	Low

Image 39: Looking towards tree 2819 and 2820 showing the required canopy pruning (hatched yellow). The West side of the canopy of each tree is to be reduced to allow for the works. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 50mm.

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9.35 **Zone 19 – Canterbury Bowls Club:** Multiple trees within this area are located adjacent to work areas. A combination of tree removal and pruning will be required. Twelve trees will be located within the footprint of the proposed works/demolition areas and are to be removed to accommodate the development, including tree 19, 20, 43a, 43b, 44, 46, 47, 48, 63, 63a, 63b and 63c. Smaller insignificant weed species adjacent to the boundary fence are also to be cleared to accommodate the development. Twenty-three trees will require canopy pruning to allow for the works, including tree 9, 17, 18, 21, 22, 23, 24, 25, 27, 28, 29, 31, 37, 38, 39, 40, 41, 42, 43, 54a, 61, 61a and 62 – see Images below. Three additional trees will not be impacted by the development works and will require protecting, including tree 26, 39 and 60 The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
9	*Casuarina glauca*	1. Long	A1	5.6	98.5	2.6	Native	High
17	*Lophostemon confertus*	1. Long	A1	13.4	564.1	3.2	Native	High
18	*Lophostemon confertus*	1. Long	A1	9.6	289.5	3.1	Native	High
19	*Lophostemon confertus*	1. Long	A1	10.2	326.9	3.2	Native	High
20	*Lophostemon confertus*	1. Long	A1	9.6	289.5	3.1	Native	High
21	*Lophostemon confertus*	1. Long	A1	8.6	232.4	3.0	Native	High
22	*Lophostemon confertus*	1. Long	A1	8.4	221.7	2.9	Native	High
23	*Lophostemon confertus*	1. Long	A1	6.7	141.0	2.8	Native	High
24	*Lophostemon confertus*	1. Long	A1	7.8	191.1	2.9	Native	High
25	*Lophostemon confertus*	1. Long	A1	7.2	162.9	2.8	Native	High
26	*Dracaena draco*	2. Medium	A1	4.8	72.4	2.3	Exotic	Medium
27	*Ficus spp*	1. Long	A1	3.6	40.7	2.4	Native	High
28	*Ficus benjamina*	1. Long	A1	9.6	289.5	3.1	Exotic	High
29	*Morus spp*	2. Medium	Z3	4.8	72.4	2.4	Exotic	Low
30	*Syagrus romanzoffiana*	2. Medium	Z3	3.0	28.3	NA	Exotic	Low
31	*Cotoneaster spp*	5. Small/Young	Z1	6.0	113.1	2.5	Exotic	Low
37	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
38	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
39	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
40	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
41	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium

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Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
42	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
43	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
43a	*Celtis sinensis*	5. Small/Young	Z3	2.4	18.1	1.7	Exotic	Very Low
43b	*Camellia japonica*	5. Small/Young	Z1	1.8	10.2	1.5	Exotic	Very Low
44	*Cupressus torulosa*	3. Short	Z10	7.2	162.9	2.8	Exotic	Medium
46	*Cupressus torulosa*	3. Short	Z10	6.0	113.1	2.5	Exotic	Medium
47	*Pittosporum undulatum*	5. Small/Young	Z1	4.8	72.4	2.3	Native	Low
48	*Cupressus torulosa*	1. Long	A1	7.0	153.9	2.7	Exotic	Medium
54a	*Cinnamomum camphora*	5. Small/Young	Z3	2.9	26.4	1.9	Exotic	Low
60	*Eucalyptus spp*	1. Long	A1	7.2	162.9	2.8	Native	High
61	*Cinnamomum camphora*	1. Long	A1	18.0	1017.9	4.0	Exotic	Medium
61a	*Lagunaria patersonia*	5. Small/Young	Z1	2.4	18.1	1.7	Native	Low
62	*Cupressus torulosa*	1. Long	A1	7.2	162.9	2.7	Exotic	Medium
63	*Leptospermum petersonii*	3. Short	Z10	4.3	58.1	2.4	Native	Medium
63a	*Ligustrum lucidum*	5. Small/Young	Z3	2.2	15.2	1.7	Exotic	Very Low
63b	*Cinnamomum camphora*	5. Small/Young	Z1	2.0	12.6	1.7	Exotic	Very Low
63c	*Casuarina glauca*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Very Low

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Image 40: Looking towards tree 9 showing the required canopy pruning (hatched yellow). The West side of the canopy of the Western most tree is to be crown raised to 10m. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 150mm.

Image 41: Looking towards tree 17 and 18, showing the required pruning. The yellow lines indicate the branches to be removed. The red lines indicate the final pruning cut locations. The pruning will result in the removal of less than 10% of the live foliage area of each tree.

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Image 42: Looking towards tree 19-25. Tree 19 and 20 are to be removed. Showing the required canopy pruning for tree 21, 22, 23, 24 and 25(hatched yellow). The North side of the canopy of each tree is to be crown raised to 8m. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 150mm.

Image 43: Looking towards tree 26. No development impacts – to be retained and protected.

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Image 44: Looking towards tree 27 and 28. Showing the required canopy pruning (hatched yellow). The East side of the canopy of each tree is to be crown raised to 5m. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 200mm.

Image 45: Looking towards tree 29 and 30. Showing the required canopy pruning for tree 29 (hatched yellow). The East side of the canopy of the tree is to be crown raised to 5m. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 500mm. No canopy pruning is required for tree 30.

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Image 46: Looking towards tree 31. Showing the required canopy pruning for the trees (hatched yellow). The East side of the canopy of the tree is to be crown raised to 3.5m. The pruning will result in the removal of less than 10% of the live foliage area of each tree. The finished cut diameter must not exceed 100mm.

Image 47: Looking towards tree 37-43. Two pruning options have been proposed for these trees:
Option 1 - The North side of the canopy of each tree is to be crown raised to 3.5m.
Option 2 - The South side of the canopy of each tree is to be crown raised to 3m.
Both options will have similar impacts to the trees. Finished cut diameter must not exceed 150mm.

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Image 48: Looking towards tree 43a. Tree 43a is recommended for removal due to development impacts from proposed fence.

Image 49: Looking towards tree 43b. Tree 43b is recommended for removal due to development impacts from proposed fence.

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Image 50: Looking towards tree 44 and 46. Tree 44 and 46 are recommended for removal due to development impacts from proposed fence.

Image 51: Looking towards tree 47. Tree 47 is recommended for removal due to development impacts from proposed fence.

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Image 52: Insignificant Small weed species to be removed adjacent to the fence.

Image 53: Looking towards tree 48. Tree 48 is recommended for removal due to development impacts from proposed fence.

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Image 54: Insignificant small weed species to be removed adjacent to the fence.

Image 55: Looking towards tree 54a. Showing the required canopy pruning for the tree (hatched yellow). The West side of the lower canopy of the tree is to be crown reduced by 1m. The pruning will result in the removal of less than 5% of the live foliage area of each tree. The finished cut diameter must not exceed 80mm.

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Image 56: Looking towards tree 61a. Showing the required canopy pruning for the tree (hatched yellow). The North side of the lower canopy of the tree is to be crown reduced by 1m. The pruning will result in the removal of less than 5% of the live foliage area of each tree. The finished cut diameter must not exceed 80mm.

Image 57: Looking towards tree 60. No development impacts – to be retained and protected.

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Image 58: Looking towards tree 61. Showing the required canopy pruning for the tree (hatched yellow). The North side of the canopy of the tree is to be crown raised by 5m. The pruning will result in the removal of less than 5% of the live foliage area of each tree. The finished cut diameter must not exceed 100mm.

Image 59: Looking towards tree 62. Showing the required canopy pruning for the tree (hatched yellow). The North side of the canopy of the tree is to be crown raised by 5m. The pruning will result in the removal of less than 5% of the live foliage area of each tree. The finished cut diameter must not exceed 100mm.

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Image 60: Looking towards tree 63. Tree 63 is recommended for removal due to development impacts from the demolition works.

Image 61: Looking towards tree 63a, 63b and 63c. The trees are recommended for removal due to development impacts from the demolition works.

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Image 62: Looking towards insignificant small weed species adjacent to the building – to be removed to accommodate the demolition works.

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9.36 **Zone 20a – Bridge Loch Street SW Abutment:** The tree within this area is located adjacent to the proposed piling/works area and will require canopy pruning to allow for the works. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
785	*Cinnamomum camphora*	3. Short	Z10	10.9	373.3	4.2	Exotic	Medium

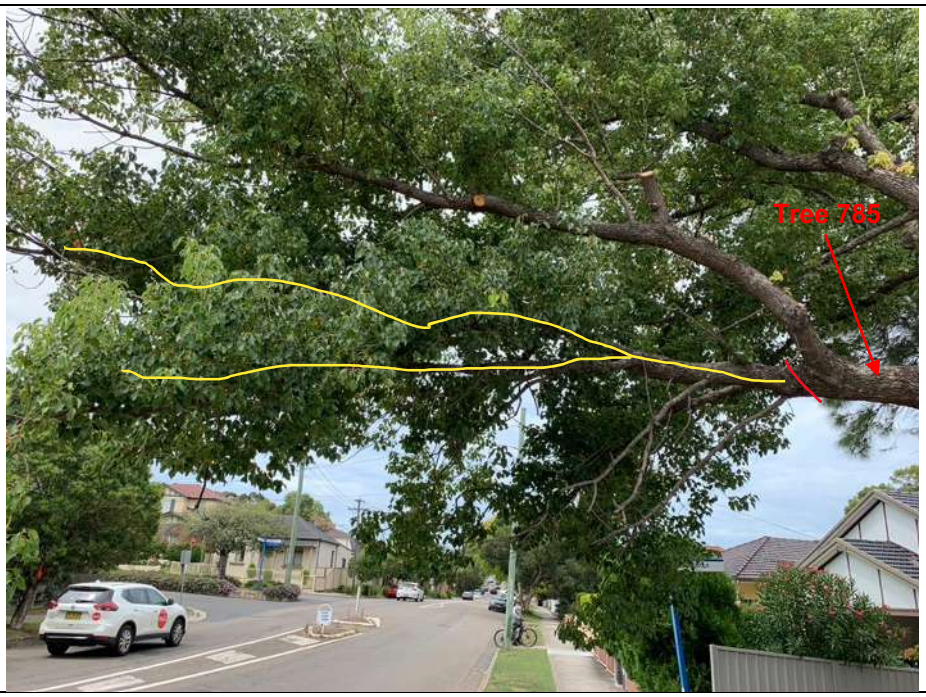

Image 63: Looking towards tree 785 showing the required canopy pruning. The 200mm diameter third order branch to the East @ 4m is to be removed. The yellow line indicates the branch to be removed, the red line indicates the final pruning cut location. (hatched yellow). The pruning will result in the removal of less than 5% of the live foliage area of each tree.

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Image 64: Looking towards tree 785 showing the additional required canopy pruning (hatched yellow). The Northeast side of the canopy of is to be reduced by 2m. The pruning will result in the removal of less than 5% of the live foliage area of the tree. The finished cut diameter must not exceed 100mm.

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9.37 **Zone 20b – Bridge Loch Street NW Abutment:** The tree within this area is located adjacent to the proposed piling/works area and will require canopy pruning to allow for the works. Additional insignificant small weed species are also to be removed adjacent to the piling area. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2377	*Callistemon viminalis*	1. Long	A1	4.6	66.5	2.9	Native	High

Image 65: Looking towards tree 2377 showing the required canopy pruning (hatched yellow). The South side of the canopy of is to be reduced by 2m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 80mm.

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Image 66: Looking towards the small weed species to be removed to accommodate the piling works.

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9.38 **Zone 20c – Bridge Loch Street NE Abutment:** The tree within this area is located adjacent to the proposed piling/works area and will require canopy pruning to allow for the works. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2378	*Eucalyptus microcorys*	1. Long	A1	4.0	50.3	2.5	Native	High

Image 67: Looking towards tree 2377 showing the required canopy pruning. The 130mm first order branch to eh Northeast at 1.5m is to be removed to allow for the piling works. The yellow line indicates the branch to be removed, the red line indicates the location of the final pruning cut. The pruning will result in the removal of less than 5% of the live foliage area.

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9.39 **Zone 21 – Bridge Belmore Pedestrian underpass:** The tree within this area is located adjacent to the proposed piling/works area and will require canopy pruning to allow for the works. Additional insignificant small weed species are also to be removed adjacent to the piling area. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2305	*Cinnamomum camphora*	2. Medium	Z3	4.8	72.4	2.3	Exotic	Low

Image 68: Looking towards tree 2305 showing the required canopy pruning (hatched yellow). The West side of the canopy of is to be reduced by 2m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 80mm.

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Image 69: Looking towards the small weed species to be removed to accommodate the piling works.

Image 70: Looking towards the small weed species to be removed to accommodate the piling works.

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9.40 **Zone 22 – Bridge Moreton Street NW Abutment:** The tree within this area is located adjacent to the proposed piling/works area and will require canopy pruning to allow for the works. Additional small weed species/vegetation is also to be removed adjacent to the piling area. The following tree has been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
2163	*Lophostemon confertus*	1. Long	A1	9.6	289.5	3.2	Native	Very High

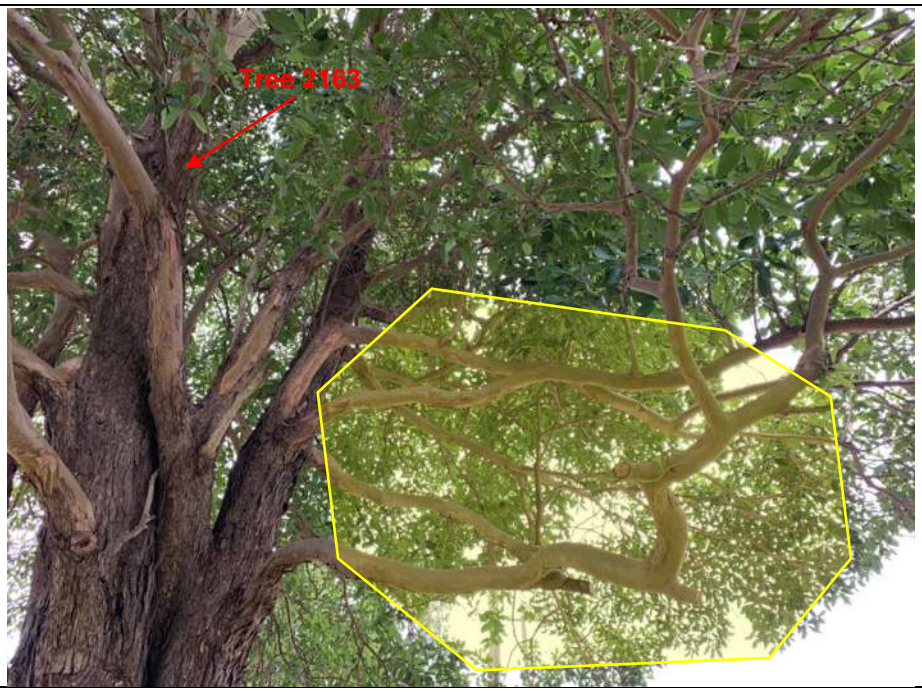

Image 71: Looking towards tree 2163 showing the required canopy pruning (hatched yellow). The North side of the canopy of is to be crown raised by 4.5m. The pruning will result in the removal of 15% of the live foliage area of the tree. The finished cut diameter must not exceed 120mm.

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9.41 **Zone 23a – RW21 Near Lakemba South Side:** The trees within this area are located adjacent to the proposed retaining wall/works area and will require canopy pruning to allow for the works. Additional insignificant small weed species are also to be removed adjacent to the works area. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
987	*Schinus molle*	1. Long	A1	9.6	289.5	3.2	Exotic	Medium
989	*Schinus molle*	1. Long	A1	13.2	547.4	3.6	Exotic	High

Image 72: Looking towards tree 987 showing the required canopy pruning (hatched yellow). The South side of the canopy of is to be crown raised by 4m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 120mm.

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Image 73: Looking towards tree 989 showing the required canopy pruning (hatched yellow). The South side of the canopy of is to be crown raised by 4m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 500mm.

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9.42 **Zone 23b – RW21 Near Lakemba North Side:** The insignificant small weed species within this area are located adjacent to the proposed retaining wall/works area and are to be removed to allow for the works. No *vegetation* or trees have been identified for pruning or removal within this area.

Image 74: Showing small weed species/vegetation to be removed for the proposed works area.

Image 75: Showing small weed species/vegetation to be removed for the proposed works area.

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9.43 **Zone 24 – Belmore Triangle:** The insignificant small weed species/ground cover within this area is located adjacent to a new access road/works area and are to be removed to allow for the works. No *vegetation* or trees have been identified for pruning or removal within this area.

Image 76: Showing small weed species/vegetation to be removed for the proposed works area.

Image 77: Showing small weed species/vegetation to be removed for the proposed works area.

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9.44 **Zone 25 – Breust Place Punchbowl Station:** The trees within this area are located adjacent to the GST/works area. Tree 3377 and 3378 will require canopy pruning to allow for the works. Tree 3379 and 3380 will not be impacted by the works. Additional insignificant small weed species are also to be removed adjacent to the works area. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
3377	*Melaleuca bracteata 'Revolution Gold'*	2. Medium	A1	4.9	75.4	2.4	Native	Medium
3378	*Melaleuca bracteata 'Revolution Gold'*	5. Small/Young	Z1	2.4	18.1	1.8	Native	Low
3379	*Melaleuca bracteata 'Revolution Gold'*	5. Small/Young	Z1	2.0	12.6	1.5	Native	Low
3380	*Melaleuca bracteata 'Revolution Gold'*	5. Small/Young	Z1	2.2	15.2	1.8	Native	Low

Image 78: Looking towards tree 3377 showing the required canopy pruning (hatched yellow). The West side of the canopy of is to be crown raised by 2m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 100mm.

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Image 79: Looking towards tree 3378 showing the required canopy pruning (hatched yellow). The Southwest side of the canopy of is to be crown raised by 2m. The pruning will result in the removal of less than 10% of the live foliage area of the tree. The finished cut diameter must not exceed 100mm. No canopy pruning is required for tree 3379 and 3380.

Image 80: Showing small weed species to be removed for the proposed works area.

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9.45 **Zone 26 – Bridge Stacey St Bankstown:** The trees within this area are located adjacent to the new protection screens/works area. Tree 1510 and 1511 will be in conflict with the works area and are required to be removed. Tree 1512 will require canopy pruning to allow for the works. The following trees have been identified in this area;

Tree ID	Species	SULE	Retention Value	TPZ Radius (M)	TPZ Area (m^2)	SRZ Radius (m)	Native or Exotic Species	Amenity/ Visual Value
1510	*Eucalyptus microcorys*	1. Long	A1	4.2	55.4	2.3	Native	High
1511	*Eucalyptus microcorys*	2. Medium	A1	2.9	26.4	2.0	Native	Medium
1512	*Eucalyptus microcorys*	1. Long	A1	6.6	136.8	2.7	Native	High

Image 81: Showing tree 1510, recommended for removal due to development impacts from the proposed works area.

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Image 82: Showing tree 1511, recommended for removal due to development impacts from the proposed works area.

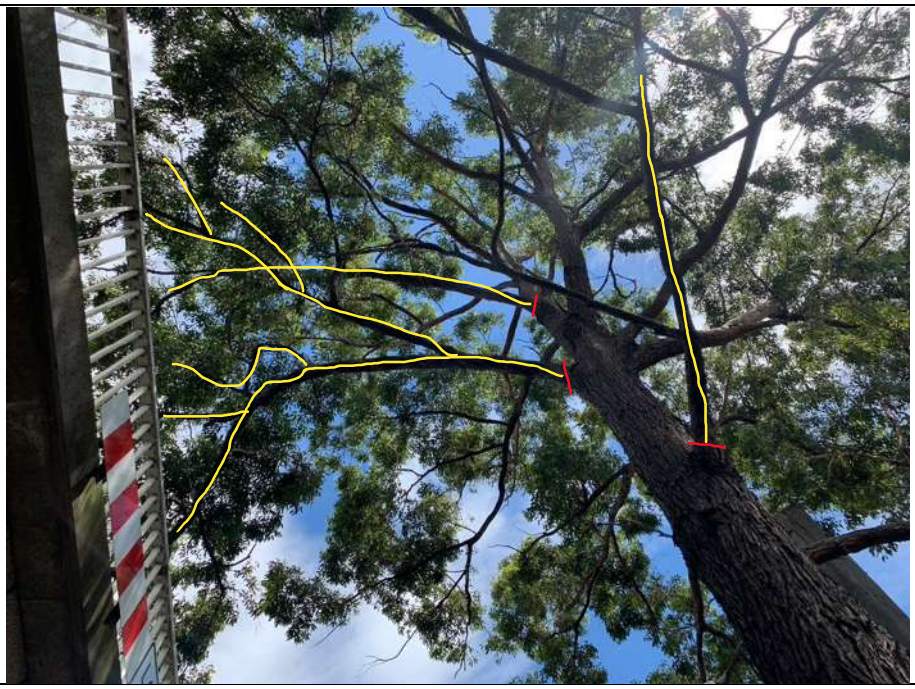

Image 83: Looking up into the canopy of tree 1512, showing required canopy pruning. The dead branch to the North at 5m is to be removed. The first order 150mm branch to the East at 7m is to be removed. The second order 140mm branch to the East at 9m is to be removed. The pruning will result in the removal of 10% of the overall live canopy.

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10. CONCLUSIONS

10.1 **Table 2:** Summary of the impact to trees and *vegetation* by the development;

Impact	Reason	Category A	Category Z	TOTAL
		A	Z	
Trees recommended to be removed	Installation of services, construction works areas, vehicle access	19, 20, 48, 605, 680, 681, 693, 694, 731, 1510, 1511, 2817, 3180, 3276, 3277, 3278, 3279, 3281, 3282	43a, 43b, 44, 46, 47, 63, 63a, 63b, 63c, 2818, 2869, 2872, 3178, 3181, 3280, 3286, 3287, 3288, 3295, 3375	**39 trees**
Vegetation recommended to be removed	Installation of services, construction works areas, vehicle access	None	3293, 3294	**2 veg**
Trees recommended to be retained requiring canopy pruning	Clearance for construction works i.e. vehicle access, GST, GLT, Service trenching etc.	9, 17, 18, 21, 22, 23, 24, 25, 27, 28, 61, 62, 74, 115, 257, 692, 724, 950, 951, 987, 989, 1299, 1300, 1512, 2163, 2377, 2378, 2819, 2868, 2870, 3069, 3175, 3292, 3296, 3377	29, 31, 37, 38, 39, 40, 41, 42, 43, 54a, 61a, 75, 684, 727, 785, 2305, 2820, 2871, 3125, 3128, 3179, 3216, 3376, 3378	**59 trees**
Vegetation recommended to be retained requiring canopy pruning	Clearance for construction works i.e. vehicle access, GST, GLT, Service trenching etc.	None	G27	**1 group of veg**
Trees recommended to be retained subject to no construction impacts	Installation of services, construction works areas, vehicle access will not impact the trees	26, 60	30, 3379, 3380	**5 trees**

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11. RECOMMENDATIONS

11.1 This report assesses the impact of a proposed development to one hundred and three (103) trees, two (2) *vegetation* and one (1) group of *vegetation* that are located at selected areas around the development site.

11.2 Thirty-nine (39) trees have been recommended for removal to accommodate the development, including tree 19, 20, 43a, 43b, 44, 46, 47, 48, 63, 63a, 63b, 63c, 605, 680, 681, 693, 694, 731, 1510, 1511, 2817, 2818, 2869, 2872, 3178, 3180, 3181, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3286, 3287, 3288, 3295 and 3375. See Table 2 for recommended tree removal by retention values.

11.3 Two (2) *vegetation* have been recommended for removal to accommodate the development, including *vegetation* 3293 and 3294. Both 3293 and 3294 have a category Z retention value and should generally not be a constraint to development.

11.4 Fifty-nine (59) trees have been identified for canopy pruning to provide clearance for proposed construction works, including tree 9, 17, 18, 21, 22, 23, 24, 25, 27, 28, 29, 31, 37, 38, 39, 40, 41, 42, 43, 54a, 61, 61a, 62, 74, 75, 115, 257, 684, 692, 724, 727, 785, 950, 951, 987, 989, 1299, 1300, 1512, 2163, 2305, 2377, 2378, 2819, 2820, 2868, 2870, 2871, 3069, 3125, 3128, 3175, 3179, 3216, 3292, 3296, 3376, 3377 and 3378. Refer to section 9 for canopy pruning specifications. All pruning works must be completed in accordance with AS4373-2007 Pruning of Amenity Trees.

11.5 One (1) group of *vegetation* (12) trees has been identified for canopy pruning to provide clearance for proposed construction works, including *vegetation* G27. Refer to section 9 for canopy pruning specifications. All pruning works must be completed in accordance with AS4373-2007 Pruning of Amenity Trees.

11.6 Five (5) additional trees will not be impacted by the development and can be retained in a viable condition, including tree 26, 30, 60, 3379 and 3380.

11.7 All trees and *vegetation* that require canopy pruning can be retained in a viable condition. All trees and *vegetation* to be retained must be protected in accordance with AS4970-2009, details of which are included in section 12

11.8 Site plans have been included in appendix 1 to identify tree locations. The following site plans are included in appendix 1;

- Appendix 1A – Zone 1, 2, 3 and 4
- Appendix 1B – Zone 5 and 6
- Appendix 1C – Zone 7, 14 and 15
- Appendix 1D – Zone 8, 9, 10 and 11
- Appendix 1E – Zone 12
- Appendix 1F – Zone 13
- Appendix 1G – Zone 16 and 17
- Appendix 1H – Zone 19

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12. TREE PROTECTION REQUIREMENTS

12.1 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site. This report and a copy of the site plans (Appendix 1) drawing must also be made available to any contractor prior to works commencing and during any on site operations.

12.2 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

12.3 **Tree work:** All tree work should be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

12.4 **Initial site meeting/on-going regular inspections:** The project Arborist is to hold a pre-construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to tree protection that may arise. In accordance with AS4970-2009, the project Arborist should carryout regular site inspections to ensure works are carried out in accordance with this document throughout the development process. Site inspections are recommended on a monthly frequency throughout the development.

12.5 **Site Specific Tree Protection Recommendations:** Site specific tree protection measures should be specified by the project Arborist during the initial site meeting, prior to development works. All development works that are within the TPZ of the trees to be retained should be discussed during this meeting and required tree protection measures agreed in writing.

12.6 **Tree Protection Specifications:** It is the responsibility of the principle contractor to install tree protection prior to works commencing at the site (prior to demolition works) and to ensure that the tree protection remains in adequate condition for the duration of the development. The tree protection must not be moved without prior agreement of the project Arborist. The project Arborist must inspect that the tree protection has been installed in accordance with this document and AS4970-2009 prior to works commencing.

12.6.1 Protective fencing: The protective fencing must be constructed from materials that complies with all other relevant standards for fencing and temporary structures within the rail corridor, i.e. bollards, flagging etc. The fencing should only be removed for the landscaping/soft works phase. Where it is not feasible to install fencing at the specified location due to factors such as restricting access to areas of the site or for constructing new structures, an alternative location should be specified and must be installed in accordance with AS4970-2009.

12.6.2 TPZ signage: Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

12.6.3 Trunk and Branch Protection: The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

12.6.4 Mulch: Any areas of the TPZ located inside the subject site must be mulched to a depth of 75mm with good quality mulch. Mulch must not be built-up around the trunk the trees as it can cause collar rot.

12.6.5 Ground Protection: Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified by the project Arborist as required.

12.6.6 Temporary irrigation: Temporary irrigation should distribute water evenly throughout the area of the TPZ. The irrigation should be used for at minimum one hour daily throughout all stages of the development.

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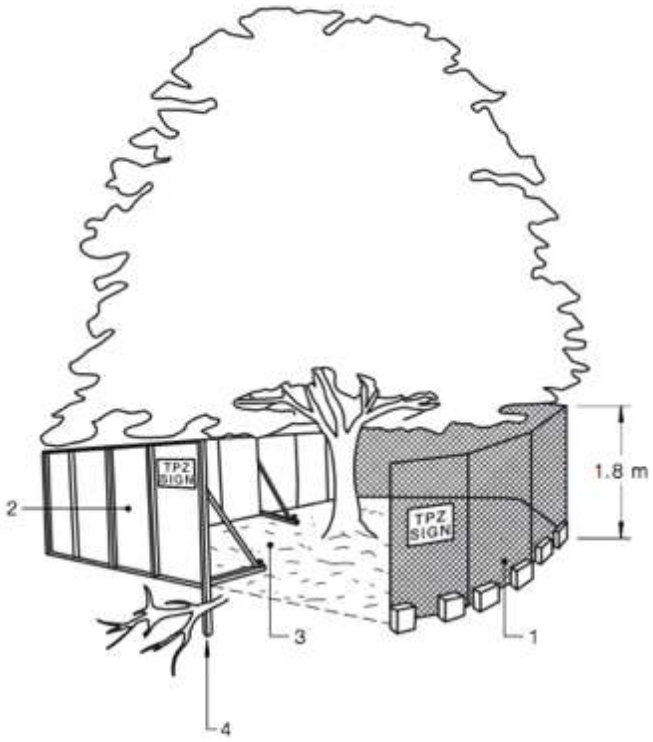

LEGEND:
1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

An image from AS4970-2009,[12] with example tree protection.

[12] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.

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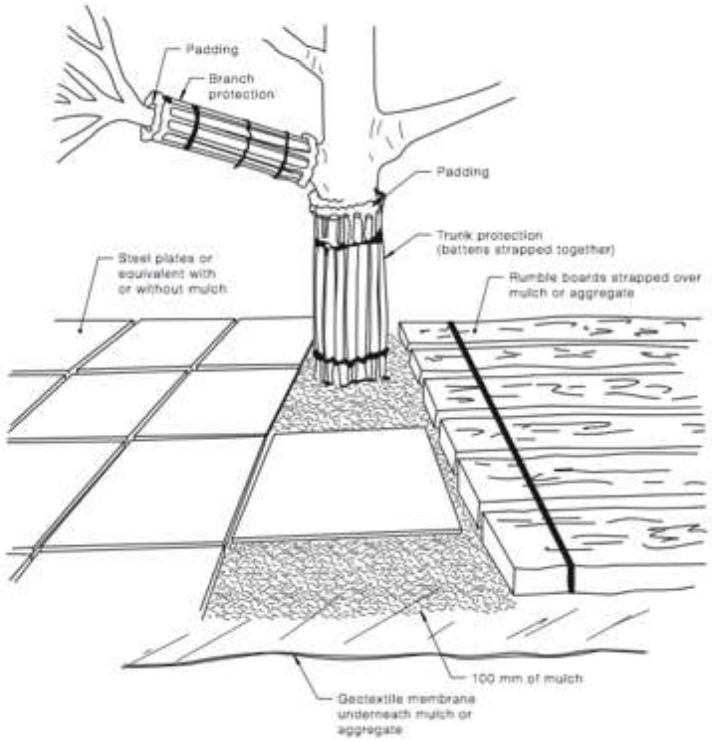

NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.

2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

An image from AS4970-2009,[13] with example tree protection.

12.7 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refuelling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

[13] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

12.8 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the 'top down, pull back' method.

12.9 **Excavations:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 40mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 40mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[14] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

12.10 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

12.11 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

12.12 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

[14] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

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13. CONSTRUCTION HOLD POINTS FOR TREE PROTECTION

13.1 **Hold Points:** Below is a sequence of hold points requiring project Arborist certification throughout the development process**.** It provides a list of hold points that must be checked and certified. All certification must be provided in written format upon completion of the development. The final certification must include details of any instructions for remediation undertaken during the development. The principal contractor should be responsible for implementing all tree protection requirements.

Hold Point	Stage	Date Completed and Signature of Project Arborist Responsible
Project Arborist to hold pre construction site meeting with principal contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise. Project Arborist to mark all trees approved for removal.	Prior to development work commencing	
Project Arborist to assess and certify that tree protection has been installed in accordance with AS4970-2009 prior to works commencing at site.	Prior to development work commencing.	
In accordance with AS4970-2009 the project arborist should carryout regular site inspections to ensure works are carried out in accordance with the recommendations. Site inspection are recommended on a monthly frequency.	On-going throughout the development	
The removal of existing structures inside the TPZ of any tree to be retained, such as the existing buildings and hard surfaces, must be completed in consultation with the Project Arborist.	Demolition	
The Project Arborist must be consulted with for all manual excavations and root pruning inside the TPZ of any tree to be retained. Project Arborist to approve all pruning of roots greater than 40mm inside TPZ. All root pruning of roots greater than 40mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3.	Construction	
Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009.	Construction	
Project Arborist to approve relocation of tree protection for landscaping. All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimise the impact to trees.	Construction/ Landscape	
After all demolition, construction and landscaping works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.	Upon completion of development	

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14. BIBLIOGRAPHY/REFERENCES

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- *Marrickville Development Control Plan 2011*, https://www.innerwest.nsw.gov.au/develop/planning-controls/current-development-control-plans-dcp/marrickville-dcp.
- *Canterbury Local Environmental Plan 2012*, https://www.legislation.nsw.gov.au/#/view/EPI/2012/673.
- *Canterbury Development Control Plan 2012*, https://www.cbcity.nsw.gov.au/development/planning-control-policies/canterbury-development-control-plan-2012.

15. LIST OF APPENDICES

The following are included in the appendices:

- Appendix 1A – Zone 1, 2, 3 and 4
- Appendix 1B – Zone 5 and 6
- Appendix 1C – Zone 7, 14 and 15
- Appendix 1D – Zone 8, 9, 10 and 11
- Appendix 1E – Zone 12
- Appendix 1F – Zone 13
- Appendix 1G – Zone 16 and 17
- Appendix 1H – Zone 19
- Appendix 2 - Tree inspection schedule
- Appendix 3 - Definition of Methodology

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Cert III Landscape Construction
Member Arboriculture Australia
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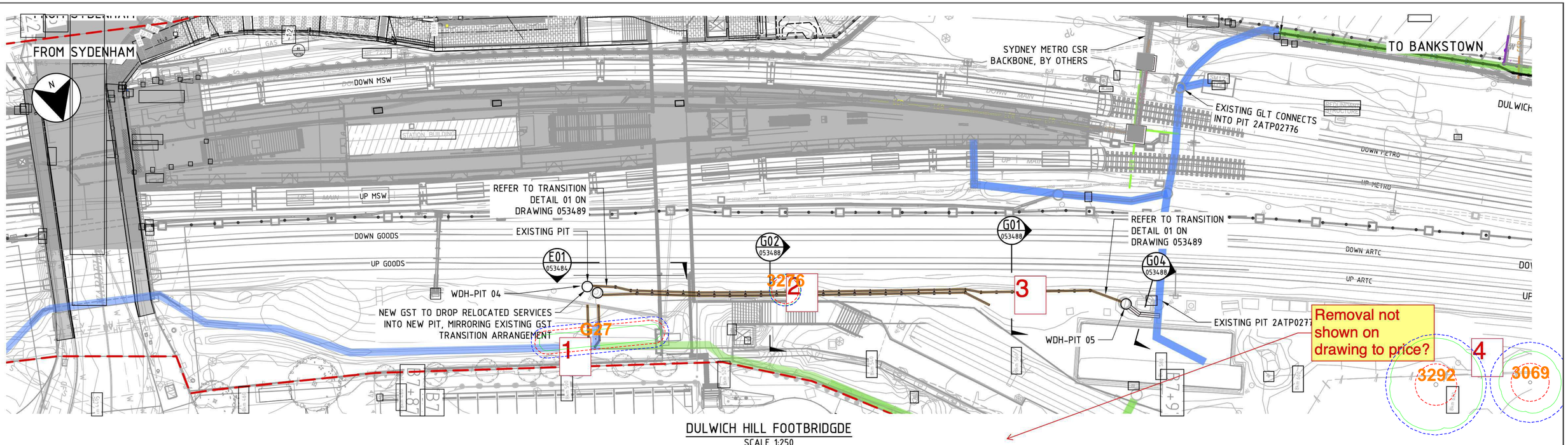
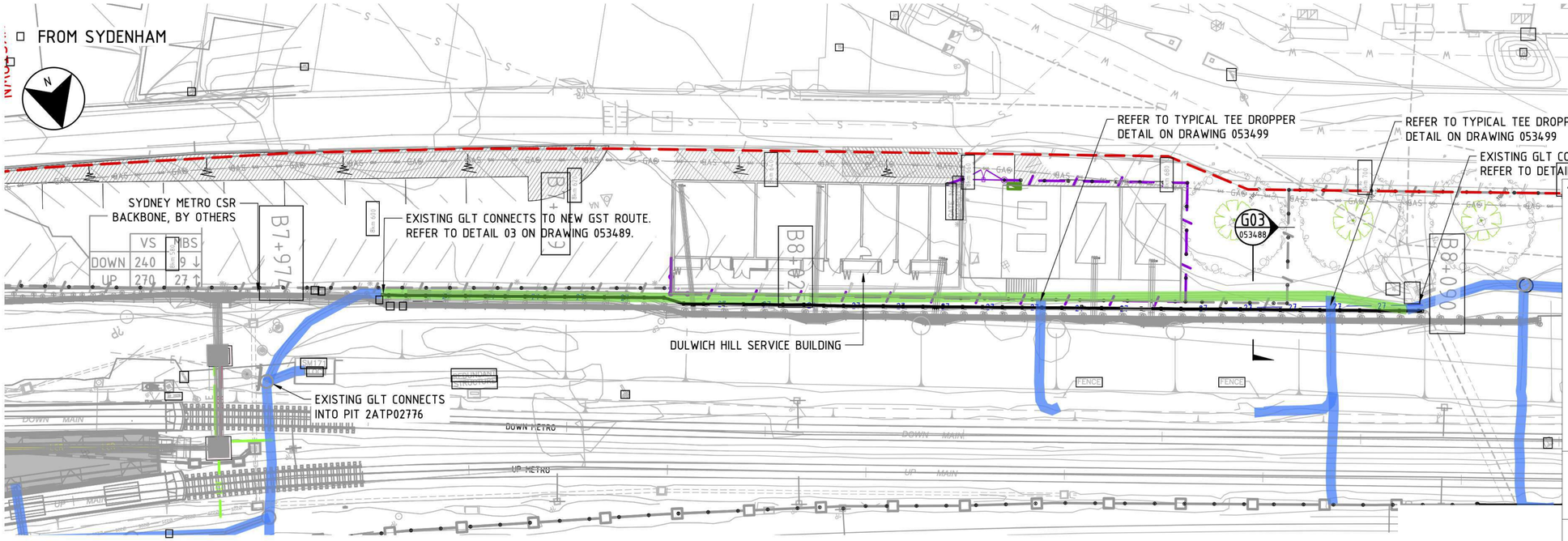
ISA Tree Risk Assessment Qualification (TRAQ)



DULWICH HILL FOOTBRIDGDE
SCALE 1:250



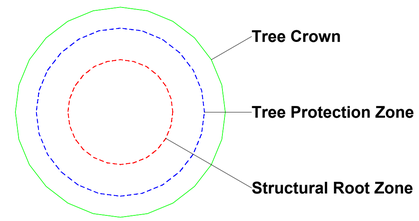
DULWICH HILL SERVICE BUILDING
SCALE 1:250

LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

Tree Legend



0 — 40m

Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074
sales@urbanarbor.com.au, (02) 8004 2802

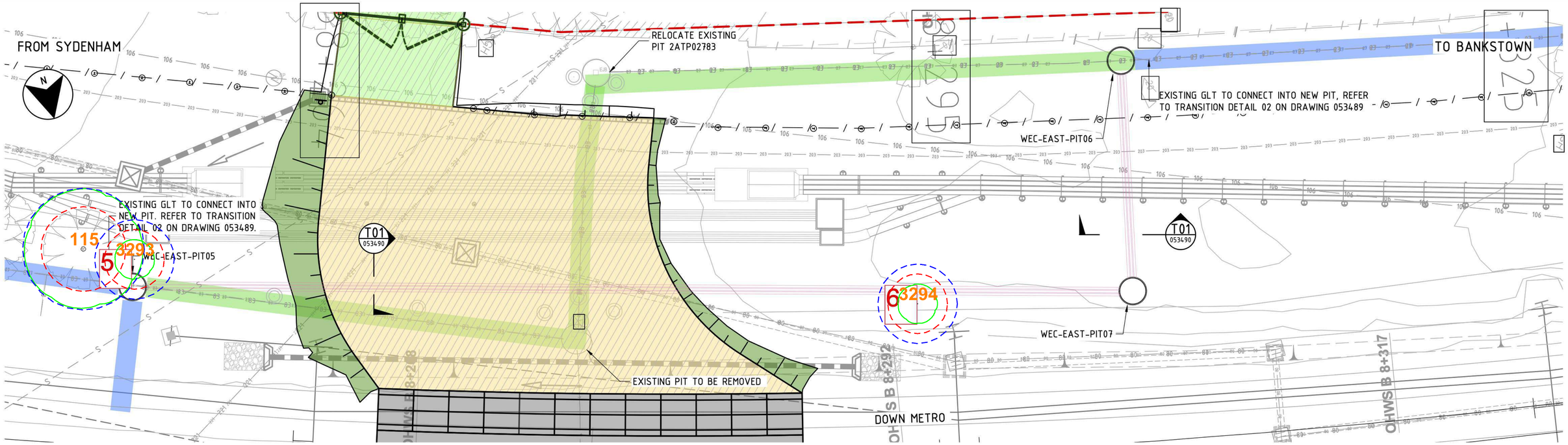
Site Location: Southwest Metro, Dulwich Hill, NSW

SCALE :	DATE :
1 : 250 @ A1	16/12/2020

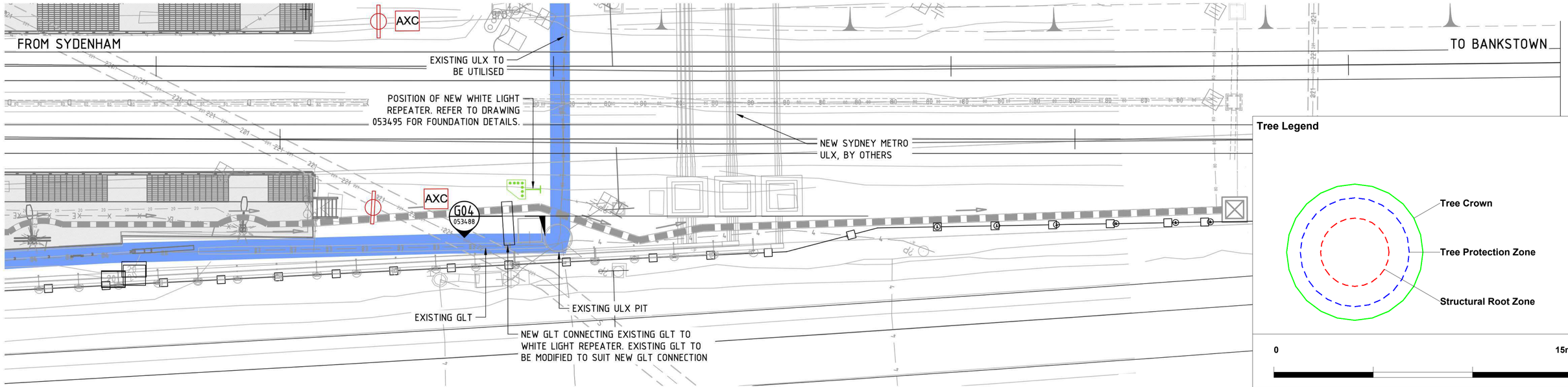
Appendix 1A: Zone 1, 2, 3 and 4

URBAN ARBOR
The Trusted Name in Tree Management

Prepared by: Bryce Claassens



DULWICH HILL HI-RAIL PAD
1:100



HURLSTONE PARK STATION
SCALE 1:100

LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

Tree Legend

0 15m

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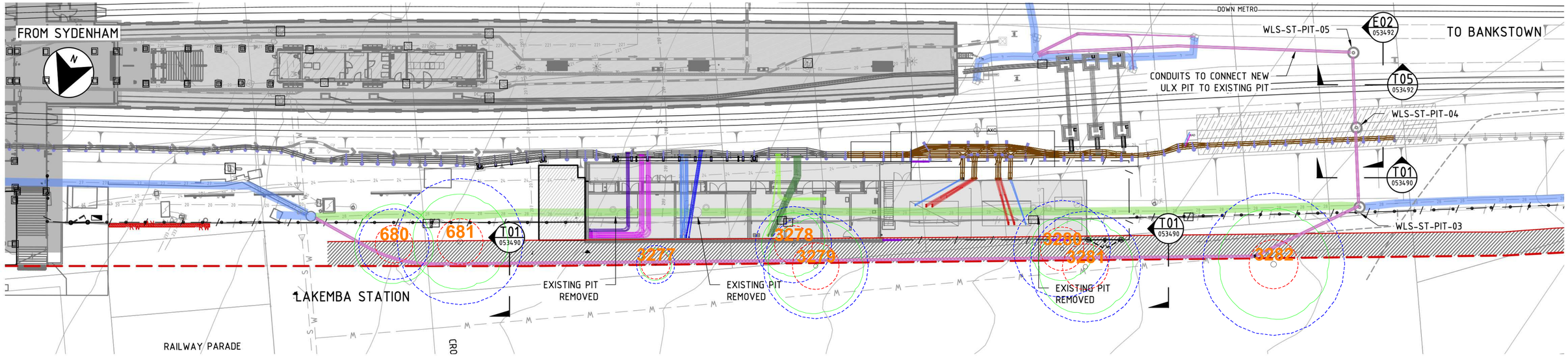
Site Location: Southwest Metro, Dulwich Hill, NSW

SCALE :	DATE :
1 : 100 @ A1	16/12/2020

Appendix 1B: Zone 5 and 6

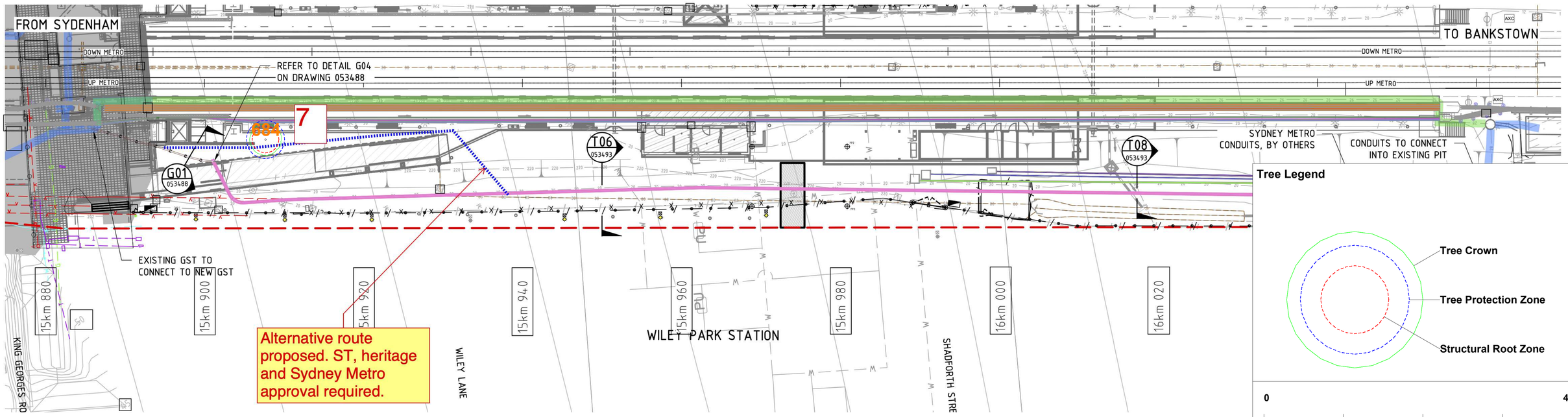
URBAN ARBOR
The Trusted Name in Tree Management

Prepared by: Bryce Claassens



LAKEMBA SERVICE BUILDING

1:250



WILEY PARK STATION

1:250

LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

Tree Legend

0 — 40m

Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074

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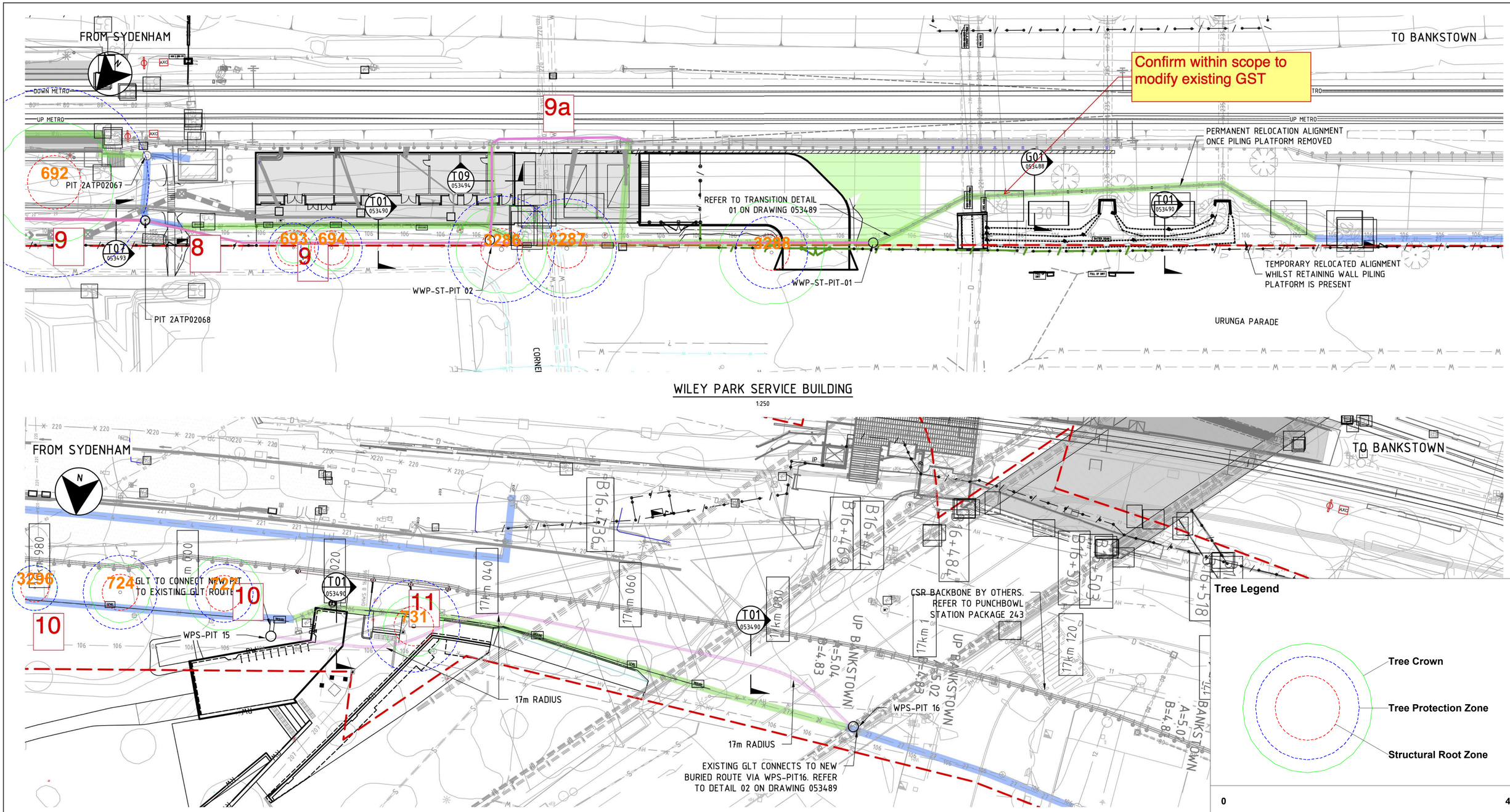
Site Location: Southwest Metro, Lakemba and Wiley Park, NSW

SCALE :	DATE :
1 : 250 @ A1	16/12/2020

Appendix 1C: Zone 7, 14 and 15

URBAN ARBOR
The Trusted Name in Tree Management

Prepared by: Bryce Claassens



WILEY PARK SERVICE BUILDING

1:250

PUNCHBOWL STATION

1:250

LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

NOTES

Tree Legend

0 — 40m

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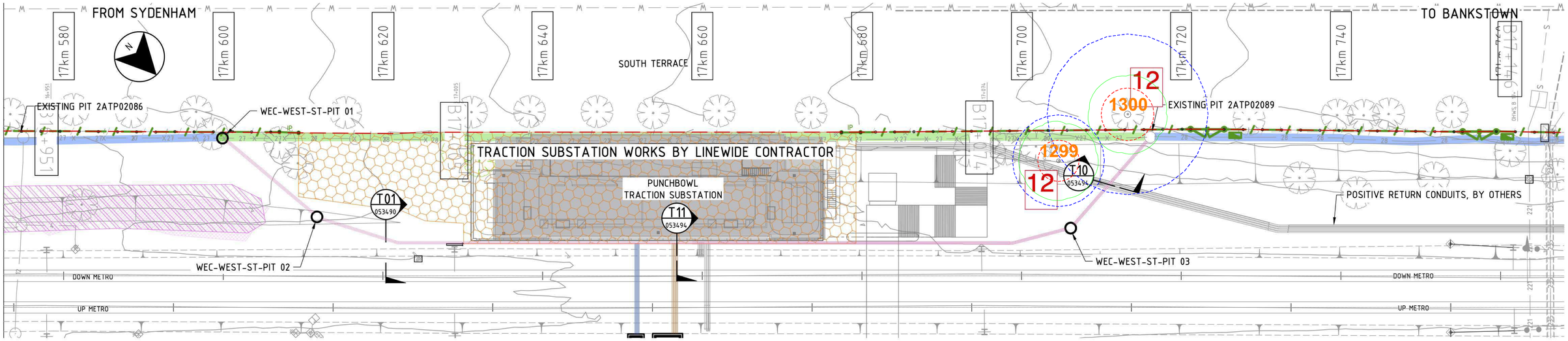
Site Location: Southwest Metro, Wiley Park and Punchbowl, NSW

SCALE :	DATE :
1 : 250 @ A1	16/12/2020

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1D: Zone 8, 9, 10 and 11

Prepared by: Bryce Claassens



PUNCHBOWL TRACTION SUBSTATION
1:250

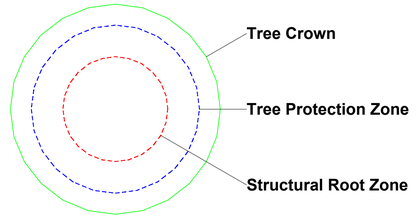
LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

NOTES

Tree Legend



0 40m

Urban Arbor Pty Ltd
PO Box 450, Turramurra, NSW, 2074
sales@urbanarbor.com.au, (02) 8004 2802

Site Location: Southwest Metro, Punchbowl, NSW

SCALE : 1 : 250 @ A1	DATE : 16/12/2020

Appendix 1E: Zone 12

Prepared by: Bryce Claassens

FROM SYDENHAM
TO BANKSTOWN
TRACTION SUBSTATION WORKS BY LINEWIDE CONTRACTOR
LAKEMBA
TRACTION SUBSTATION
BOULEVARDE
RAILWAY PARADE
DENNIS STREET
TAYLOR STR
ADJOINS SMCSWSWM-MTM-WEC-CE-DWG-203122
ADJOINS SMCSWSWM-MTM-WEC-CE-DWG-203124
DOWN METRO
UP METRO
950
951
14km 660
14km 680
14km 700
14km 720
14km 740
14km 760
14km 780
14km 800
14km 820
14km 840
PLAN
1:250
Tree Legend
Tree Crown
Tree Protection Zone
Structural Root Zone
0
40m

Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074

sales@urbanarbor.com.au, (02) 8004 2802

Site Location: Southwest Metro, Lakemba, NSW

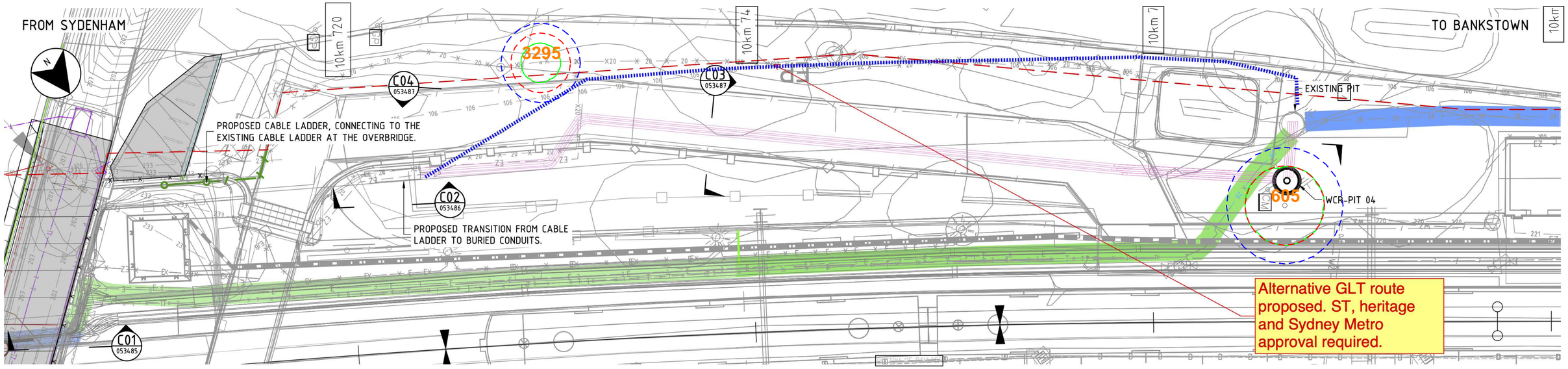
SCALE : 1 : 250 @ A1

DATE : 16/12/2020

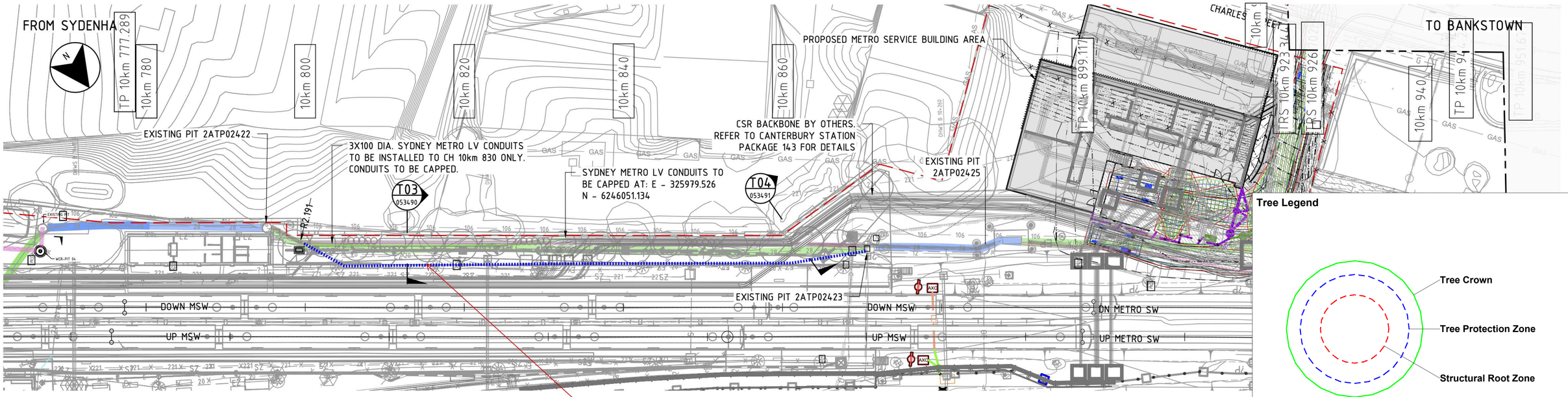
URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1F: Zone 13

Prepared by: Bryce Claassens



CANTERBURY STATION
SCALE 1:100



CANTERBURY SERVICE BUILDING
SCALE 1:250

NOTES

LEGEND

CONTAINMENT

- CSR - PROPOSED GST ROUTE
- CSR - EXISTING GST ROUTE BY OTHERS
- CSR - PROPOSED CABLE TRAY ROUTE
- CSR - UNDERGROUND CONDUIT
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REUSED
- EXISTING SYDNEY TRAINS S&C ROUTE TO BE REMOVED

Tree Legend

0 15m

Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074
sales@urbanarbor.com.au, (02) 8004 2802

Site Location: Southwest Metro, Canterbury, NSW

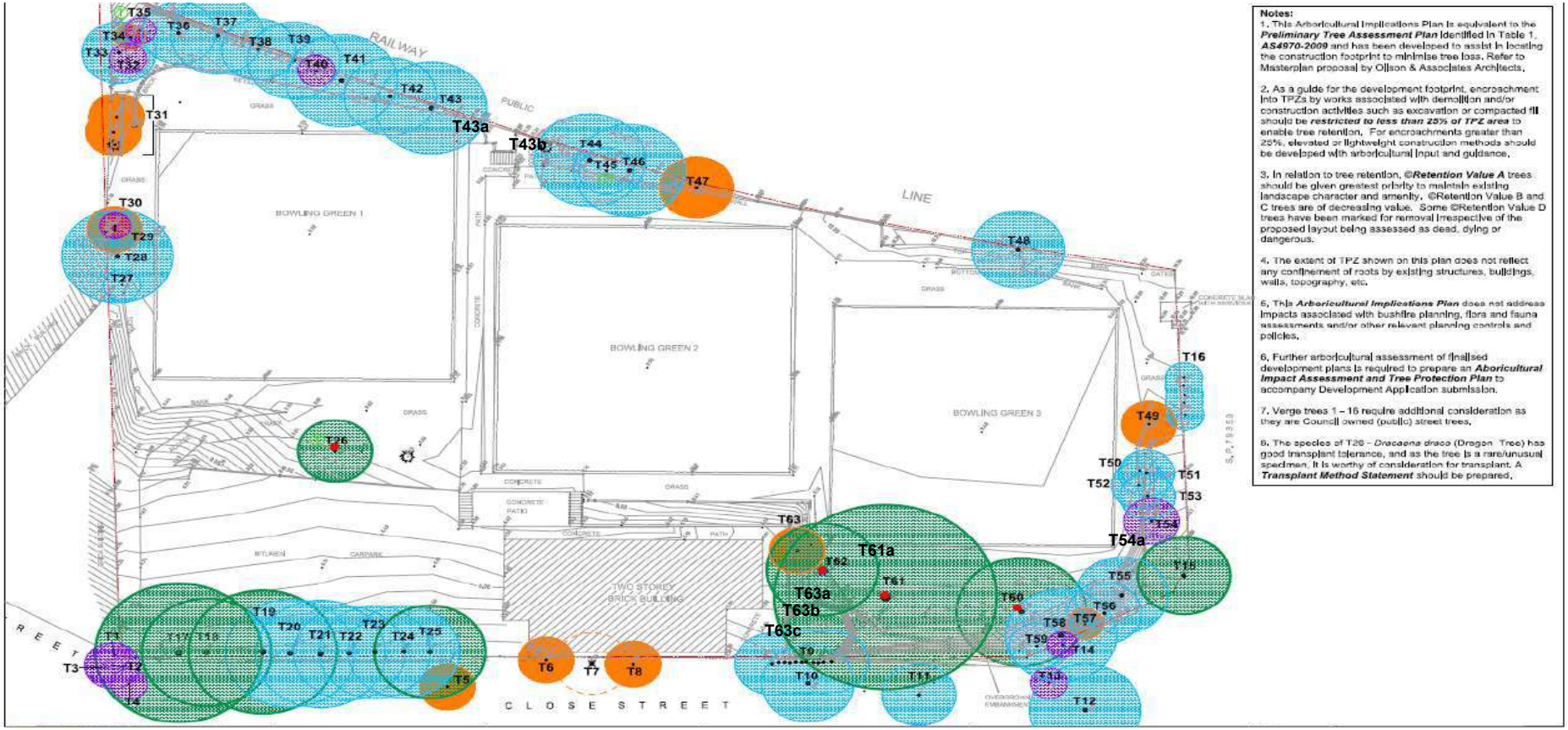
SCALE :	DATE :
1 : 100 @ A1	16/12/2020

Appendix 1G: Zone 16 and 17

URBAN ARBOR
The Trusted Name in Tree Management

Prepared by: Bryce Claassens

Appendix 1H - Zone 19



Notes:

1. This Arboricultural Implications Plan is equivalent to the ***Preliminary Tree Assessment Plan*** identified in Table 1, ***AS4970-2009*** and has been developed to assist in locating the construction footprint to minimise tree loss. Refer to Masterplan proposal by Ollson & Associates Architects.

2. As a guide for the development footprint, encroachment into TPZs by works associated with demolition and/or construction activities such as excavation or compacted fill should be ***restricted to less than 25% of TPZ area*** to enable tree retention. For encroachments greater than 25%, elevated or lightweight construction methods should be developed with arboricultural input and guidance.

3. In relation to tree retention, ©***Retention Value A*** trees should be given greatest priority to maintain existing landscape character and amenity. ©Retention Value B and C trees are of decreasing value. Some ©Retention Value D trees have been marked for removal irrespective of the proposed layout being assessed as dead, dying or dangerous.

4. The extent of TPZ shown on this plan does not reflect any confinement of roots by existing structures, buildings, walls, topography, etc.

5. This ***Arboricultural Implications Plan*** does not address impacts associated with bushfire planning, flora and fauna assessments and/or other relevant planning controls and policies.

6. Further arboricultural assessment of finalised development plans is required to prepare an ***Aboricultural Impact Assessment and Tree Protection Plan*** to accompany Development Application submission.

7. Verge trees 1 – 16 require additional consideration as they are Council owned (public) street trees.

8. The species of T26 - *Dracaena draco* (Dragon Tree) has good transplant tolerance, and as the tree is a rare/unusual specimen, it is worthy of consideration for transplant. A ***Transplant Method Statement*** should be prepared.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
9	Swamp Sheoak	*Casuarina glauca*	Mature	24	6	470					470	550	Good	Good	High	1. Long	A1	5.6	2.6	Group of 10 trees. Western most trees within group require canopy pruning. Crown raise the lowest Western and North Western branches. Max finsihed cut diameter of 150mm.
17	Queensland Brushbox	*Lophostemon confertus*	Mature	20	9	800	500	600			1118	900	Good	Good	High	1. Long	A1	13.4	3.2	Potential removal - if removal is not required, crown raise North side of canopy to 8m.
18	Queensland Brushbox	*Lophostemon confertus*	Mature	20	8	800					800	850	Good	Good	High	1. Long	A1	9.6	3.1	Potential removal - if removal is not required, crown raise North side of canopy to 8m.
19	Queensland Brushbox	*Lophostemon confertus*	Mature	22	8	850					850	900	Good	Good	High	1. Long	A1	10.2	3.2	Crown raise North side of canopy to 8m.
20	Queensland Brushbox	*Lophostemon confertus*	Mature	22	8	800					800	850	Good	Good	High	1. Long	A1	9.6	3.1	Crown raise North side of canopy to 8m.
21	Queensland Brushbox	*Lophostemon confertus*	Mature	22	8	720					720	780	Good	Good	High	1. Long	A1	8.6	3.0	Crown raise North side of canopy to 8m.
22	Queensland Brushbox	*Lophostemon confertus*	Mature	21	8	700					700	750	Good	Good	High	1. Long	A1	8.4	2.9	Crown raise North side of canopy to 8m.
23	Queensland Brushbox	*Lophostemon confertus*	Mature	21	8	560					560	650	Good	Good	High	1. Long	A1	6.7	2.8	Crown raise North side of canopy to 8m.
24	Queensland Brushbox	*Lophostemon confertus*	Mature	21	8	650					650	750	Good	Good	High	1. Long	A1	7.8	2.9	Crown raise North side of canopy to 8m.
25	Queensland Brushbox	*Lophostemon confertus*	Mature	20	8	600					600	700	Good	Good	High	1. Long	A1	7.2	2.8	Crown raise North side of canopy to 8m.
26	Dragon Tree	*Dracaena draco*	Mature	4	3	400					400	400	Good	Fair	Medium	2. Medium	A1	4.8	2.3	To be protected.
27	Fig	*Ficus spp*	Mature	11	6	300					300	450	Good	Good	High	1. Long	A1	3.6	2.4	Crown raise East side of canopy to 5m.
28	Weeping Fig	*Ficus benjamina*	Mature	12	8	800					800	850	Good	Good	High	1. Long	A1	9.6	3.1	Crown raise East side of canopy to 5m.
29	Mulberry	*Morus spp*	Mature	10	4	400					400	450	Good	Good	Low	2. Medium	Z3	4.8	2.4	Crown raise East side of canopy to 5m. Exempt species.
30	Cocos Palm	*Syagrus romanzoffiana*	Mature	10	2	250					250	NA	Good	Good	Low	2. Medium	Z3	3.0	NA	No pruning required. Exempt species.
31	Cotoneaster	*Cotoneaster spp*	Mature	7	3	500					500	500	Good	Fair	Low	5. Small/Young	Z1	6.0	2.5	Crown raise East side of canopy to 3m. Undesirable species.
37	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
38	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
39	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
40	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
41	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
42	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
43	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Two options of crown raising for North or South side.
43a	Hackberry	*Celtis sinensis*	Semi-mature	4	2	200					200	200	Good	Fair	Very Low	5. Small/Young	Z3	2.4	1.7	Reduce North side of crown by 1m for fence.
43b	Japanese Camellia	*Camellia japonica*	Young	3	1	150					150	150	Good	Fair	Very Low	5. Small/Young	Z1	2.0	1.5	Reduce North side of crown by 200mm for fence.
44	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	600					600	650	Good	Fair	Medium	3. Short	Z10	7.2	2.8	Reduce North side of crown by 200mm for fence.
46	Himalayan Cypress	*Cupressus torulosa*	Mature	7	3	500					500	500	Good	Fair	Medium	3. Short	Z10	6.0	2.5	Reduce North side of crown by 200mm for fence.
47	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	5	2	400					400	400	Good	Fair	Low	5. Small/Young	Z1	4.8	2.3	Remove for fence installation.
48	Himalayan Cypress	*Cupressus torulosa*	Mature	10	3	580					580	620	Good	Good	Medium	1. Long	A1	7.0	2.7	Remove for fence installation.
54a	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	8	3	240					240	260	Good	Fair	Low	5. Small/Young	Z3	2.9	1.9	Reduce West side of lower crown by 1m.
60	Eucalypt	*Eucalyptus spp*	Mature	20	8	600					600	650	Good	Good	High	1. Long	A1	7.2	2.8	Could not access base of tree for fruit identification. To be protected.
61	Camphor Laurel	*Cinnamomum camphora*	Mature	16	9	1500					1500	1600	Good	Good	Medium	1. Long	A1	15.0	4.0	Crown raise North side of canopy to 5m. To be protected
61a	Norfolk Island Hibiscus	*Lagunaria patersonia*	Semi-mature	8	3	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Reduce North side of lower crown by 1m.
62	Himalayan Cypress	*Cupressus torulosa*	Mature	13	4	600					600	620	Good	Good	Medium	1. Long	A1	7.2	2.7	Crown raise South side of canopy to 3m. To be protected
63	Lemon Scented Teatree	*Leptospermum petersonii*	Mature	7	4	200	300				361	450	Good	Fair	Medium	3. Short	Z10	4.3	2.4	Poor overall form. Remove for demolition.
63a	Broad-leaved Privet	*Ligustrum lucidum*	Young	6	2	180					180	200	Good	Fair	Very Low	5. Small/Young	Z3	2.2	1.7	Exempt species. Remove for demolition.
63b	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	9	2	100	100				141	200	Good	Fair	Very Low	5. Small/Young	Z1	2.0	1.7	Remove for demolition.
63c	Swamp Sheoak	*Casuarina glauca*	Young	7	1	50	50	50			87	150	Good	Fair	Very Low	5. Small/Young	Z1	2.0	1.5	Remove for demolition.
74	Common Oak	*Quercus robur*	Mature	8	4	450					450	470	Good	Fair	Medium	2. Medium	A2	5.4	2.4	Located within corridor. Pruned for power line clearance.
75	Coral	*Erythrina crista-galli*	Mature	8	4	400					400	440	Good	Fair	Low	2. Medium	Z3	4.8	2.3	Located within corridor. Pruned for power lines. Exempt species.
115	Parramatta Wattle	*Acacia parramattensis*	Mature	9	3	180	180				255	350	Good	Fair	Medium	2. Medium	A1	3.1	2.1	Located within corridor. South stem lopped.
257	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	8	4	180	200	300			403	450	Good	Fair	Medium	2. Medium	A1	4.8	2.4	Canopy extends into corridor.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
605	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	6	2	200	140				244	300	Good	Good	Medium	2. Medium	A1	2.9	2.0	None.
680	Lemon Scented Gum	*Corymbia citriodora*	Mature	17	5	370					370	450	Good	Good	High	1. Long	A1	4.4	2.4	Co-dominant stems with relatively good form to union.
681	Queensland Brushbox	*Lophostemon confertus*	Mature	9	6	660					660	720	Good	Good	High	1. Long	A1	7.9	2.9	None.
684	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	4	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Located within corridor.
692	Peppercorn	*Schinus molle*	Mature	10	8	1050					1050	1200	Good	Good	Medium	1. Long	A1	12.6	3.6	Located within corridor.
693	Chinese Tallo	*Triadica sebifera*	Mature	5	2	160	160	160			277	450	Good	Good	Medium	2. Medium	A1	3.3	2.4	Located within corridor.
694	Chinese Tallo	*Triadica sebifera*	Mature	6	3	340					340	410	Good	Good	Medium	1. Long	A1	4.1	2.3	Located within corridor.
724	Queensland Brushbox	*Lophostemon confertus*	Mature	7	4	410					410	460	Good	Good	Medium	1. Long	A1	4.9	2.4	Located within corridor. DBH estimated.
727	Lemon Scented Gum	*Corymbia citriodora*	Semi-mature	9	5	190	260				322	450	Good	Fair	Medium	3. Short	Z10	3.9	2.4	Co-dominant stems with lopped East stem.
731	Queensland Brushbox	*Lophostemon confertus*	Mature	9	4	240	450				510	580	Good	Good	High	1. Long	A1	6.1	2.6	Asymmetric crown shape.
785	Camphor Laurel	*Cinnamomum camphora*	Mature	9	7	700	400	300	300		911	1800	Good	Fair	Medium	3. Short	Z10	10.9	4.2	Significant canopy pruning for powerline clearance. Located outside corridor.
950	Queensland Brushbox	*Lophostemon confertus*	Mature	7	4	360					360	460	Good	Fair	Medium	2. Medium	A1	4.3	2.4	Located within nature strip. Pruned for power line clearance.
951	Queensland Brushbox	*Lophostemon confertus*	Mature	8	4	400					400	440	Good	Fair	Medium	2. Medium	A1	4.8	2.3	Located within nature strip. Pruned for power line clearance.
987	Peppercorn Tree	*Schinus molle*	Mature	16	6	800					800	950	Good	Good	Medium	1. Long	A1	9.6	3.2	Located within corridor. DBH estimated.
989	Peppercorn Tree	*Schinus molle*	Mature	13	9	1100					1100	1200	Good	Good	High	1. Long	A1	13.2	3.6	Located within corridor. DBH estimated.
1299	Tallowood	*Eucalyptus microcorys*	Mature	19	5	480					480	560	Good	Good	High	1. Long	A1	5.8	2.6	Located within corridor.
1300	Tallowood	*Eucalyptus microcorys*	Mature	18	5	840					840	990	Good	Fair	High	2. Medium	A1	10.1	3.3	Located within nature strip. Cambium damage to south side of trunk near base of tree. Co-dominant stems with tight union.
1510	Tallowood	*Eucalyptus microcorys*	Mature	15	4	350					350	400	Good	Good	High	1. Long	A1	4.2	2.3	Canopy extends into corridor.
1511	Tallowood	*Eucalyptus microcorys*	Semi-mature	14	3	240					240	290	Good	Fair	Medium	2. Medium	A1	2.9	2.0	Located adjacent to bridge.
1512	Tallowood	*Eucalyptus microcorys*	Mature	22	6	550					550	600	Good	Good	High	1. Long	A1	6.6	2.7	Canopy extends into corridor.
2163	Queensland Brushbox	*Lophostemon confertus*	Mature	15	6	800					800	890	Good	Good	Very High	1. Long	A1	9.6	3.2	None.
2305	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	7	2	400					400	400	Good	Fair	Low	2. Medium	Z3	4.8	2.3	Exempt species.
2377	Weeping Bottlebrush	*Callistemon viminalis*	Mature	9	3	180	180	180	150	160	381	750	Good	Good	High	1. Long	A1	4.6	2.9	Visually prominent.
2378	Tallowood	*Eucalyptus microcorys*	Mature	13	3	330					330	500	Good	Good	High	1. Long	A1	4.0	2.5	Canopy extends into corridor.
2817	Bracelet Honey Myrtle	*Melaleuca armillaris*	Mature	5	3	300	200				361	550	Good	Fair	Medium	2. Medium	A1	4.3	2.6	Exposed surface roots. Co-dominant stems.
2818	Bracelet Honey Myrtle	*Melaleuca armillaris*	Mature	7	2	220	240				326	500	Good	Fair	Medium	3. Short	Z9	3.9	2.5	Co-dominant stems with failure of east stem.
2819	Sweet Pittosporum	*Pittosporum undulatum*	Semi-mature	7	2	150					150	180	Good	Good	Medium	2. Medium	A1	2.0	1.6	Located within corridor.
2820	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	5	2	150					150	300	Good	Fair	Low	5. Small/Young	Z1	2.0	2.0	Adjacent to fence.
2868	Lemon Scented Tea Tree	*Leptospermum petersonii*	Mature	5	2	230	200				305	450	Fair	Good	Medium	2. Medium	A2	3.7	2.4	Located within nature strip. Low foliage density for species. Monitor health.
2869	Wattle	*Acacia spp*	Semi-mature	3	1	100	90	50			144	120	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Located within corridor adjacent to fence.
2870	Blue Jacaranda	*Jacaranda mimosifolia*	Mature	7	2	250					250	300	Good	Good	Medium	2. Medium	A1	3.0	2.0	Located within corridor.
2871	Oleander	*Nerium oleander*	Mature	5	2	250					250	250	Good	Fair	Low	5. Small/Young	Z1	3.0	1.8	Located within corridor.
2872	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	5	2	220					220	280	Good	Fair	Medium	4. Remove	Z5	2.6	1.9	Located within corridor. Previous failure of trunk with large vertical crack.
3069	River She Oak	*Casuarina cunninghamiana*	Mature	18	4	430					430	490	Good	Good	High	1. Long	A1	5.2	2.5	Located within park.
3125	Weeping Bottlebrush	*Callistemon viminalis*	Semi-mature	5	2	400					400	420	Good	Fair	Low	5. Small/Young	Z1	4.8	2.3	Located within nature strip.
3128	Swamp Oak	*Casuarina glauca*	Mature	6	4	400					400	450	Good	Fair	Medium	3. Short	Z10	4.8	2.4	Located within nature strip. Topped for power line clearance.
3175	Ash 'Raywood'	*Fraxinus raywood*	Semi-mature	6	2	140					140	200	Good	Fair	Medium	2. Medium	A1	2.0	1.7	Located within nature strip.
3178	Sydney Green Wattle	*Acacia decurrens*	Mature	8	2	190					190	210	Fair	Fair	Medium	3. Short	Z4	2.3	1.7	Located within nature strip. Low foliage density for species. In decline.
3179	Camphor Laurel	*Cinnamomum camphora*	Semi-mature	7	2	300					300	300	Good	Fair	Low	2. Medium	Z3	3.6	2.0	Located within corridor. Exempt species.
3180	Forest Red Gum	*Eucalyptus tereticornis*	Mature	12	5	450					450	550	Fair	Fair	High	2. Medium	A2	5.4	2.6	Located within corridor. Asymmetric crown shape due to power line clearance. Low foliage density for species.

Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
3181	Ash 'Raywood'	*Fraxinus raywood*	Young	4	1	100					100	120	Good	Fair	Low	5. Small/Young	Z1	2.0	1.5	Located within nature strip.
3216	Chinese Tallo	*Triadica sebifera*	Semi-mature	5	2	180					180	220	Good	Fair	Low	3. Short	Z10	2.2	1.8	Located within corridor. Topped for power line clearance.
3276	River She Oak	*Casuarina cunninghamiana*	Semi-mature	10	2	170					170	220	Good	Good	Medium	1. Long	A1	2.0	1.8	Trunk in contact with CSR. Removal required for relocation if assets.
3277	Tallowood	*Eucalyptus microcorys*	Semi-mature	5	2	200					200	240	Good	Good	Medium	1. Long	A1	2.4	1.8	Located within council verge/garden bed.
3278	Queensland Brushbox	*Lophostemon confertus*	Mature	6	4	400					400	450	Good	Good	High	1. Long	A1	4.8	2.4	Located within nature strip.
3279	Tallowood	*Eucalyptus microcorys*	Mature	18	6	550					550	750	Good	Good	High	1. Long	A1	6.6	2.9	Located within council verge/garden bed.
3280	Queensland Brushbox	*Lophostemon confertus*	Mature	8	4	400	160	200	150	100	508	640	Good	Fair	High	3. Short	Z10	6.1	2.7	Located within nature strip. Lopped for power line clearance.
3281	Tallowood	*Eucalyptus microcorys*	Mature	18	6	580					580	720	Good	Good	High	1. Long	A1	7.0	2.9	Located within council verge/garden bed. Co-dominant stems with tight union.
3282	Tallowood	*Eucalyptus microcorys*	Mature	14	7	500	400	380			745	850	Good	Good	High	1. Long	A1	8.9	3.1	Located within council verge/garden bed.
3286	Sydney Blue Gum	*Eucalyptus saligna*	Mature	14	6	590					590	650	Good	Fair	High	3. Short	Z10	7.1	2.8	Located within nature strip. Significantly pruned for power line clearance. Asymmetric crown shape. Low potential for recovery.
3287	Bangalay	*Eucalyptus botryoides*	Mature	11	6	550					550	580	Good	Fair	High	3. Short	Z10	6.6	2.6	Located within nature strip. Significantly pruned for power line clearance. Asymmetric crown shape. Low potential for recovery.
3288	Wallangarra White Gum	*Eucalyptus scoparia*	Mature	11	7	400					400	450	Good	Fair	High	3. Short	Z10	4.8	2.4	Located within nature strip. Significantly pruned for power line clearance. Asymmetric crown shape. Low potential for recovery.
3292	River She Oak	*Casuarina cunninghamiana*	Mature	15	6	540					540	600	Good	Good	High	1. Long	A1	6.5	2.7	Crown lift to 4.5m for heavy vehicle access.
3293	Parramatta Wattle	*Acacia parramattaensis*	Young	1	0.5	40					40	50	Good	Fair	Very Low	5. Small/Young	Z1	2.0	1.5	Not a tree as defined in scope. Vegetation only. Remove
3294	Chinese Tallo	*Triadica sebifera*	Young	2	1	10	20	20	30	20	47	100	Good	Fair	Very Low	5. Small/Young	Z1	2.0	1.5	Not a tree as defined in scope. Vegetation only.
3295	Wattle	*Acacia spp*	Young	3	1	100					100	140	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	Potential to be impacted by underground services and GLT.
3296	Wattle	*Acacia spp*	Semi-mature	5	3	250					250	250	Good	Fair	Medium	2. Medium	A1	3.0	1.8	Minor tip prune to clear 1.5m.
3375	White Mulberry	*Morus alba*	Semi-mature	7	2	200	150	90	90		281	350	Good	Fair	Low	2. Medium	Z3	3.4	2.1	Located within corridor. Exempt species.
3376	Teatree	*Melaleuca spp*	Semi-mature	5	2	200					200	200	Good	Fair	Low	5. Small/Young	Z1	2.4	1.7	Crown reduction in line with brick wall.
3377	Honey Myrtle	*Melaleuca bracteata 'Revolution Gold'*	Mature	7	3	300	280				410	450	Good	Fair	Medium	2. Medium	A1	4.9	2.4	Co-dominant stems.
3378	Honey Myrtle	*Melaleuca bracteata 'Revolution Gold'*	Semi-mature	6	2	200					200	220	Good	Good	Low	5. Small/Young	Z1	2.4	1.8	Crown raise to 2m.
3379	Honey Myrtle	*Melaleuca bracteata 'Revolution Gold'*	Semi-mature	6	1	140					140	150	Good	Good	Low	5. Small/Young	Z1	2.0	1.5	No pruning required.
3380	Honey Myrtle	*Melaleuca bracteata 'Revolution Gold'*	Semi-mature	6	2	110	150				186	250	Good	Fair	Low	5. Small/Young	Z1	2.2	1.8	No pruning required.
G27	Mixed Species	*Mixed species*	Young	2.5	1	100					100	150	Good	Fair	Very Low	5. Small/Young	Z3	2.0	1.5	Vegetation. Group of mixed species weeds

Explanatory Notes

Tree Species - Common name followed by botanical name. Where species is unknown it is indicated with an '*spp*'.
Age Class - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y).
Diameter at Breast Height (DBH) - Measured with a DBH tape or estimated at approximately 1.4m above ground level.
Diameter Above root Buttresses (DAB): Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.
Height - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.
Spread - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.
Tree Protection Zone (TPZ) - DBH x 12. Measured in radius from the centre of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 metre outside the crown projection.
Structural Root Zone (SRZ) - $(DAB \times 50)^{0.42} \times 0.64$. Measured in radius from the centre of the trunk. Rounded up to nearest 0.1m.
Health - Good/Fair/Poor/Dead
Structure - Good/Fair/Poor
Safe Useful Life Expectancy (SULE) - 1. Long (40+years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.
Amenity Value - Very High/High/Medium/Low/Very Low.

Appendix C – Urban Arbor Curriculum Vitae

Curriculum Vitae - Bryce Claassens - Consulting Arborist
Urban Arbor Pty Ltd

Address: Urban Arbor Pty Ltd, Unit 12/36 Leighton Place, Hornsby, NSW
Contact: 0450 554 715, 02 8004 2802, bryce@urbanarbor.com.au

Arboricultural and Horticultural Qualifications

- Diploma of Arboriculture (AQF5)
- Cert III Horticulture - Landscape (AQF3)
- Registered Quantified Tree Risk Assessment assessor (QTRA)

Professional Memberships

- General Membership of Arboriculture Australia (AA)

Experience

Bryce brings ten (10) years of experience in Arboriculture and Horticulture. His career has varied experience in both landscape construction/horticulture and arboricultural consulting.

Bryce is a Consulting Arborist for Urban Arbor Pty Ltd. Urban Arbor is a consultancy company that specifically deals with tree management with no practical tree work being offered. Bryce has managed sites and provided expert reports on various projects, from single trees through to large sites with over 600 trees.
Bryce has experience delivering arboricultural management and recommendations throughout the Sydney region.

Bryce's current role includes the following;
- Report writing including preliminary reports, development impact assessments, risk assessment and tree protection during development.
- Developing and implementing tree management programs
- Risk assessments using the QTRA method
- Project Arborist work
- Diagnostic procedures for determination of various tree related issues
- Consultancy work both verbal and written format

Arboricultural and Horticultural Employment History

- 2017 to Present: Consulting Arborist at Urban Arbor Pty Ltd, Sydney, NSW
- 2015 to 2017: Landscape Construction Tradesman/Stonemason at Collaroy Stoneworks, Sydney, NSW
- 2008 to 2015: Landscape Construction Apprentice-Tradesman at All Landscape Services, Sydney, NSW

Recent Project Works Undertaken

Preparing Arboricultural Impact Assessment reports for large projects, such as the new private hospital in Terrey Hills and various public schools for the Department of Education and Training school beautification project, including providing significant tree sensitive solutions of developments within public schools across Sydney.

Project Arborist on large developments including Royal Far West in Manly and Macquarie University. Bryce has worked as a project Arborist for many first tier construction companies, such as Richard Crookes, Liang O'Rourke, PDS Group and FDC Construction.

Delivering Arboricultural Impact Assessments and Project Arborist works for private developers within Councils including Ku Ring Gai Council, Hornsby Council, The Hills Shire, Holroyd Council, Inner West Council, Manly Council, Warringah Council, Pittwater Council, North Sydney Council, Mosman Council, Hunters Hill Council, Lane Cove Council, Parramatta Council, Ryde Council, Blacktown Council, Woollahra Council, Waverley Council, Sutherland Council, and Hawkesbury Council.

Appendix D – Compliance Matrix

Table 1 lists the Section of this report that demonstrate compliance with CoA – E5.

Details	**Compliance**
The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any trees as detailed in the documents listed in Condition A1. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the CSSI on trees and vegetation within and adjacent to the Construction footprint.	Section 2, Appendix A, Appendix B and Appendix C. Bryce Claassens, consulting arborist from Urban Arbor was engaged to assess trees.
The report(s) must include:	
(a) a description of the conditions of the tree(s) and its amenity and visual value;	Appendix A & Appendix B
(b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and	Section 4 , Appendix A & Appendix B
(c) measures to avoid the removal of trees or minimise damage to existing trees and ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities.	Appendix A & Appendix B
A copy of the report(s) must be submitted to the Planning Secretary before the removal or pruning of any trees, including those affected by site establishment Work. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Planning Secretary.	Section 5