Waterloo South Precinct Planning Proposal Addendum - Urban Forest Study

November 2021

Document Tracking

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ABBREVIATIONS AND DEFINITIONS

Term	Description
ADG	Apartment Design Guide (currently part of SEPP 65 – Design Quality of Residential Apartment Development)
BDAR	Biodiversity Development Assessment Report
CBD	Central business district
CoS	City of Sydney
DPIE	NSW Department of Planning, Industry and Environment
FSR	Floor space ratio
LAHC	Land and Housing Corporation
SEPP	State Environmental Planning Policy
SDCP	Sydney Development Control Plan 2012.
SLEP 2012	Sydney Local Environmental Plan 2012
Site	The area known as the Waterloo Estate (South) and included as part of the Planning Proposal (see Figure 1)
SRZ	Structural root zone
TPZ	Tree protection zone
UHI	Urban heat island

1 INTRODUCTION

1.1 Description of the Planning Proposal

In February 2021, the City of Sydney (CoS) prepared a Planning Proposal to amend the Sydney Local Environmental Plan 2012 (SLEP 2012). The request was originally put to CoS by the NSW Land and Housing Corporation (LAHC) and was supported by a number of specialist and technical studies, including an Urban Forest Study (Arterra, March 2020). LAHC are the owners of a portion of the land within the Estate.

As stated within the Planning Proposal, the predominant intended aim of the change is to enable the orderly redevelopment of the Waterloo Estate (South), located in Waterloo, NSW. Additionally, the updates to the LEP seek to allow social and affordable housing to be prioritised – yet balanced with the delivery of market housing.

The Planning Proposal:

- intends to establish a new centre in the CoS, whose built form provides high value amenity;
- is supported by infrastructure and community facilities; and
- requires high environmental performance building standards.

To meet the objectives of the Planning Proposal, the following primary adjustments were sought:

- Rezoning of land to B2 Local Centre and B4 Mixed Use.
- Changes to the permissible Floor Space Ratio (FSR) in the privately owned and the LAHC land.
- Mapping of building heights across the precinct to allow tower development in some areas, and limit height in others.

Other mapping adjustments in relation to heritage mapping, land use and public transport, and acid sulfate soils are also required, along with the inclusions of site-specific provisions for the LAHC land.

Further detail in relation to the Planning Proposal objectives and intended amendments to the LEP is provided in the CoS Planning Proposal (February, 2021).

1.2 Background

In May 2020, LAHC submitted a Planning Proposal request with CoS to change the planning controls for the land within the southern part of the Waterloo Estate – referred to as Waterloo Estate South. The CoS assessed the request and endorsed an alternative Planning Proposal to amend the SLEP 2012. The differences between the LAHC and CoS Planning Proposal 'schemes' were predominately related to changes to the overall urban design layout and building form. It is noted that the CoS Planning Proposal was supported by Arterra's Urban Forest Study that was prepared based on, and in support of, the LAHC layout. The Urban Forest Study was not updated to reflect the CoS revised Precinct layout. Although the revised layout presented by the CoS likely had a positive impact on tree retention, this was never quantified.

In an effort to resolve the differences between the LAHC and the CoS proposals, the Planning Secretary of NSW Department of Planning, Industry and Environment (DPIE) was appointed as the Principal Planning Authority (PPA). In April 2021, a Planning Proposal was subsequently submitted by DPIE for Gateway determination.

1.3 Gateway Determination and Scope of the Report

On 23 June 2021, DPIE issued a Gateway Determination which permitted amendment of the SLEP 2012 to facilitate the redevelopment of the Waterloo Estate (South) to proceed, provided a number of conditions are met.

Condition 1(a) of the Determination requires that the Planning Proposal be updated to prepare a number of technical reports, as listed in Table 1 of the Determination. Table 1 requires that an addendum to the Urban Forest Study (prepared by Arterra in March 2020 for LAHC) be prepared to address the Council concept, including opportunities to retain additional canopy trees.

The scope of this Addendum Urban Forest Study report is to address the requirements of the Gateway Determination. Specifically, this study shall:

- assess the differences between the LAHC and CoS schemes, and estimate the resultant changes to canopy tree retention;
- investigate and summarise opportunities for further canopy tree retention, via individual tree assessment (reclassification of retention value) and changes to footprint and urban design layout and approach;
- assess the differences between the CoS scheme and the revised built form provided by DPIE (the DPIE scheme), following adoption of arborist recommendations;
- quantify the overall benefit (change) the DPIE scheme achieves in relation to canopy tree retention as compared to the CoS scheme;
- outline management and mitigation measures that will assist in retaining canopy trees (throughout construction and on an ongoing basis); and
- provide comment and assessment on the landscaping and planting approach for internal courtyard open space – including the opportunity in these spaces for canopy tree retention.

Once finalised, this report shall accompany the updated Planning Proposal and be provided to NSW DPIE to inform the proposed update to the SLEP 2012.

1.4 Documents Provided for Assessment

Table 1-1 identifies the documents provided for the purposes of this assessment.

Table 1-1: *Documents provided for this assessment*

Title	Author	Date
Waterloo Estate South Urban Forest Study	Arterra	24 March 2020
Waterloo Estate South Planning Proposal	City of Sydney	February 2021
Gateway Determination: Planning Proposal PP_2021_3265	NSW DPIE	23 June 2021
Waterloo Estate South Urban Design Review Envelope Approach	Hassell	21 October, 2021

1.5 Structure

This structure of this study is outlined below.

- Section 1: Introduction and Background
- Section 2: Site Description
- Section 3: Summary of the LAHC Urban Forest Study
- Section 4: Addendum Assessment Methodology
- Section 5: Observations and Results
- Section 6: Conclusions

2 SITE DESCRIPTION

The Waterloo Estate (South) (the Site), is located within the suburb of Waterloo, approximately 3 km south of Sydney CBD, and forms part of the CoS local government area. Nearby suburbs include Redfern to the north, Green Square to the south, Alexandria to the west and Kensington to the east.

The Site is part of a greater area known as the Waterloo Estate, and includes both private land and public housing blocks owned by LAHC. It is bound by Raglan Street to the north, Cope Street and Waterloo Metro Station in the west, McEvoy Street in the south and Waterloo Park, Kellick Street, Gibson Street, Wellington Street and George Street to the east.

Figure 1 provides an aerial of the Site and Figure 2 provides the site plan as per the Planning Proposal submission (April, 2021).

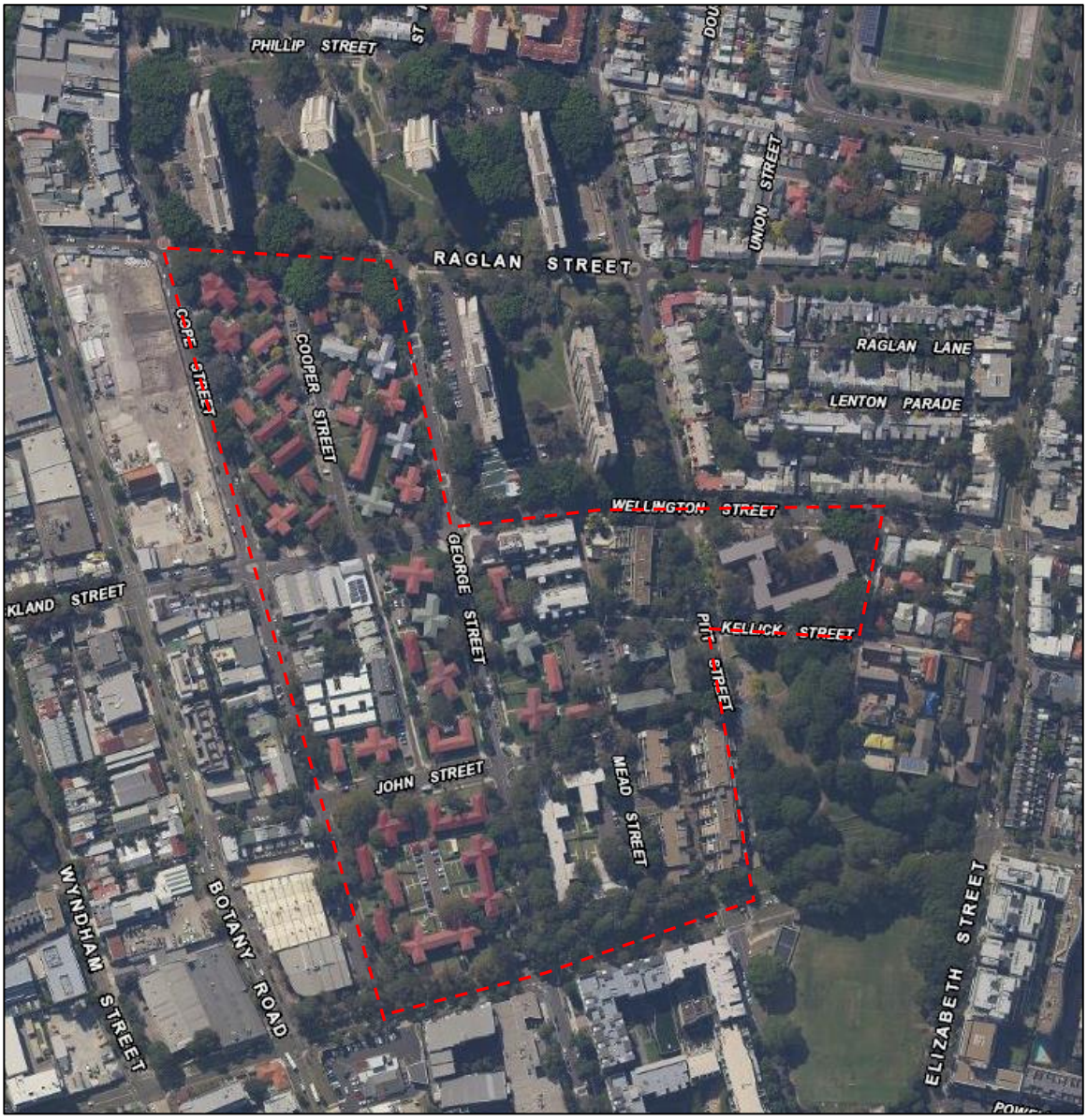

Figure 1: *Site Aerial: Waterloo Estate (South) (extents shown in red dash): Source: SixMaps (2021)*

Figure 1 Map showing extent of Waterloo Metro (South) outlined in blue, Waterloo Estate outlined in dotted green, and Waterloo Metro Quarter in dotted purple

Figure 2: *Site Location (Source: Planning Proposal – Waterloo Estate (South), February 2021)*

The Waterloo Estate is highly urbanised, with a built form reflecting development typical of the 1950's through to the 1980's. The majority of this Estate consists of social housing in the form of medium to high density residential development which is interspersed with tree lined streets, parks and open spaces (Arterra, 2020).

With regards to the area's open forest character – there are a number of significant trees that line the streets, as well as those within the adjoining parks and open spaces. A number of the residential developments include vegetated setbacks that contribute to the urban forest within the Estate. The Arterra Urban Forest Study, which was submitted to support the LAHC scheme, notes that all the existing large and very prominent significant trees (Figs and Eucalypts) are typically less than 45 years old, as the area has a history of being an industrialised suburb subject to expansive vegetation clearing.

3 SUMMARY OF LAHC URBAN FOREST STUDY

To support the original Planning Proposal request prepared by LAHC, an Urban Forest Study was prepared by Arterra Consulting Arboriculture (March 2020). The study provided LAHC with information that identified and ranked trees suitable for retention and protection, and broader methodologies and strategies on how to protect and enhance the urban forest within the Waterloo Estate (South) area.

The main observations and outcomes of the Urban Forest Study are summarised below:

- The existing canopy cover for Waterloo Estate (South) is 28.9%.
- No historically significant trees were evident from the 1943 aerial.
- Of the 551 trees within the Site:
  - 87 have a high retention value;
  - 164 have a moderate retention value; and
  - 285 have a low retention value.
- The majority of these trees are represented by *Eucalyptus microcorys* (Tallowood) and *Ficus macrocarpa var. hillii* (Hills Weeping Fig).
- Of the trees within the Site, the table below (taken from Table ii Tree Deposition, Source: Arterra, March 2020) summarises retention and removal outcomes, as a result of the LAHC layout scheme.

Table ii – Tree Disposition

Tree Disposition	**Totals**	High Retention	Moderate Retention	Low Retention	Very Low Retention
Trees to be retained	**130**	45 **(52%)**	85 **(52%)**	0	0
Trees to be removed	**421**	42 (48%)	79 (48%)	285 (100%)	15 (100%)
Totals	**551**	**87**	**164**	**285**	**15**

- The Urban Forest Study provided a number of urban forest opportunities and requirements for the redevelopment of the Site, of particular note being the following:
  - The redevelopment aims to exceed the CoS target of 50% canopy cover to streets and 25% cover to parks. Precinct canopy cover aim is a minimum 40%.
  - The most significant trees around the Site should be retained and protected.
  - The design appropriately sizes open space, verge and gardens for trees and their root zone. This includes appropriately sized setbacks and provision of appropriate soil volume.
  - The design promotes tree species and size diversity, and utilises trees for shading and wind amelioration.
  - The design incorporates trees into building design, including roof tops as well as community garden opportunities

- The table below (taken from Table iii Tree Deposition, Source: Arterra, March 2020) summarises how the LAHC scheme for the Waterloo Estate (South) proposal achieved various urban forest outcomes.

Table iii – Urban Forest Targets

Urban Forest Consideration	Baseline Condition	CoS or Other Target	**Proposed Waterloo South**	Compliance/ Trend /Comment
Canopy Coverage Overall	29%	27%	**42.4%**	Targets all well exceeded except for private.
Street	38%	50%	**59.8%**	
Parks	0%	25%	**59.0%**	
Private	25%	25%	**20.0%**	
Species Diversity				
Family	47%	40%	**40-45%**	Close to target likely
Genus	19%	30%	**20-30%**	Target likely to be achieved
Species	8%	10%	**<10%**	Target likely to be achieved
Size Class				
Civic	10%	10%	**6-8%**	Likely slightly less than target
Large	27%	35%	**30-35%**	Target likely to be achieved
Medium	44%	45%	**40-45%**	Target likely to be achieved
Small	19%	10%	**10-15%**	Likely slightly more than target
Ecological Diversity				
Endemic to Region	18%	-	**20-25%**	Acceptable Balance
Australian Native	56%	-	**50-55%**	Acceptable Balance
Exotic	23%	-	**20-25%**	Acceptable Balance
Weed / Non-desirable	3%	-	**-**	Desired

The above outcomes are based on the LAHC Planning Proposal scheme which has since been updated and adjusted by both CoS and, most recently, DPIE. This addendum report has been prepared to reassess and re-quantify the canopy tree retention potential across the Site in consideration of these updates and adjustments.

4 ADDENDUM ASSESSMENT METHODOLOGY

4.1 Overview

The following provides an outline of the methodology for this Addendum Urban Forest Study for identifying opportunities to retain additional canopy trees as part of the amended Planning Proposal, and subsequent collaboration with the project's urban design team to ascertain where development layout adjustments could be made in order to achieve this potential retention.

The assessment utilises the outcomes of onsite inspections, as well as collaboration between the proposal's urban design team and arborist.

4.2 Opportunities for Retention Assessment

4.2.1 Layout Changes

As an initial step, the LAHC layout was compared to the CoS layout (as per the February 2021 Planning Proposal) to identify and quantify any resultant changes in tree retention. This assessment considered total tree gain/loss, as well as a more detailed assessment of the value of trees gained/lost (i.e. the change in retention for high, moderate and low value trees).

A number of trees identified on the LAHC layout plan were omitted in the CoS plan. Where this has occurred, for the purposes of this analysis, it was assumed that where the CoS footprint encroached on a tree's trunk by less than 50%, it could be retained. This assumption was applied for street trees, trees along the setbacks and verges, and trees that would become part of an internal courtyard.

4.2.2 Tree Assessment and Classification

The value of trees within the Waterloo Estate (South) were revisited and reconsidered based on the following:

- Any tree significance identified within the SLEP 2012 and the Sydney Development Control Plan (SDCP) 2012.
- Any tree significance or protection requirements that have been identified by a State Environmental Planning Policy (SEPP).
- Reclassification of tree value, following site inspection and assessment by the proposal's arborist, where the aim was to specifically identify opportunities to retain canopy trees.

This assessment contributed to identification of retention priorities and potential across this Site, and therefore informed recommendations for footprint adjustments.

4.2.3 Footprint Adjustments

During consultation with NSW DPIE, a process of collaboration with the urban design team (Hassell) was undertaken to identify and explore opportunities to adjust the final built form and design of the Site, in order to achieve positive environmental outcomes. This included investigating footprint adjustments to allow for additional canopy tree retention.

In a meeting with NSW DPIE (3 August, 2021), a number of target and focus areas were identified for further investigation as to whether opportunities existed for footprint adjustments and subsequent additional canopy tree retention. These target areas were:

- McEvoy Street East Block – where a number of existing canopy trees were previously proposed to be removed, but were identified as desirable for retention to provide for additional canopy cover, improved pedestrian and building amenity, and to provide a natural buffer between the street and future residential development.
- North-Eastern end of Site (Wellington Street, Gibson Street and Kellick Street) – a number of significant existing canopy trees are located in this area along the street and were previously identified for removal. Adjustments to layout and setbacks may allow for retention of these trees for improved street amenity and canopy cover.
- Pitt Street North – similar to the north-eastern end of the site, a number of canopy street trees were proposed to be removed. Retention of canopy trees in this area is desirable to improve street and building amenity, and to interface and compliment the adjacent parkland area.

It was noted, however, that any opportunities for canopy tree retention identified across the Site would also be considered.

Following this initial consultation and collaboration process, a site inspection and data collection was undertaken by the Project Arborist (see Section 4.3). Opportunities for canopy tree retention were identified/confirmed and recommendations and results provided to DPIE and Hassell to inform preparation of final layout and design.

The final adjusted design was then reviewed by the Project Arborist and total additional tree retention calculated (change compared to the CoS scheme) (Section 5.2.4).

4.3 Site Inspection and Data Collection

Having considered the various opportunities that may exist for canopy tree retention, following assessment of CoS layout changes (4.2.1), tree assessment and classification (4.2.2) and opportunities for further footprint adjustment (4.2.3), the scope for a site inspection and subsequent retention assessment was refined and included the following:

- Review all high and moderate value trees proposed for removal in the Arterra proposal that are accessible. Confirm their locations, identification numbers and any relevant data on site.
- Plot and overlay all trees with the potential for retention onto the CoS/Hassell proposal, and review where additional trees could / should be retained.
- Plot the Tree Protection Zones (TPZ), Structural Root Zones (SRZ) and estimated canopy projections to scale for each tree recommended to be retained to provide an approach for tree retention expressed as a building setback (refer to Attachment A).
- Prepare a site plan identifying the trees nominated for retention with their identification numbers and root projections in accordance with AS4970 Protection of Trees on Development Sites 2009 (refer to Attachment A).
- Prepare a second site plan showing the nominated trees, their identification numbers and the retention values (refer to Attachment B).

- Prepare one table containing all trees assessed (refer to Attachment C), and one table containing all trees nominated for retention with additional information pertaining to their potential retention (refer to Table 5-2).

This process formed the basis for discussion and collaboration with the urban design team, to identify areas where additional canopy trees may be retained, and therefore where layout and footprint adjustment may be required.

4.4 Canopy Tree Planting in Courtyards

A preliminary assessment of opportunities and risks, and potential strategies in relation to planting of canopy trees in shared courtyards of individual block units was considered. The outcomes of the assessment were discussed with the urban designers (Hassell) to inform the practicality and feasibility of courtyard planting and how (if at all) this could contribute to tree canopy retention across the Site.

5 OBSERVATIONS AND RESULTS

5.1 General Observations

Following completion of the site inspection, the following general observations were made in relation to existing tree value and canopy cover, and the proposed Waterloo Estate (South) development:

- Both former proposals (LAHC and CoS) and the current proposal (DPIE scheme) would require a significant volume of trees to be removed. Due to the amendment of roadways, walkways and the development of new buildings with more storeys and basements, all trees within the southern precinct would be impacted either directly or indirectly.
- Indirect impacts can be associated with the changes in hydrology/water movement within the soil due to basements and new below ground services. Above ground, wind tunnelling from tall buildings and shading, also from tall buildings, would subject trees to ongoing development impact. These impacts require consideration where mature, established trees are proposed to be retained, particularly in courtyards and on the McEvoy Street frontage. Detailed modelling on these components could be used as the design progresses to assess the level of indirect impact and enable the implementation of relevant mitigation strategies, such as timed irrigation where a reduced/changed water availability is anticipated.
- It is considered that the final amended proposal presented by Hassell (the DPIE scheme) would have capacity for enhanced tree retention, although the same direct and indirect impacts would apply together with relevant management strategies (see Section 5.3). Wider streets and courtyards would allow for the retention of more trees located on the streets and the residential sites immediately adjoining the public domain, as would the implementation of pedestrianised areas. Basement location has not been considered as part of this assessment (due to the preliminary nature of the design), however, general guidance has been provided in Table **5-2**.
- Pedestrianised areas exist to the south of Cope and George Streets (Figure 3). These areas are already dominated by hard surfaces and contain multiple trees already accustomed to the hard surfacing. These areas are considered appropriate for potential pedestrian traffic or cycleways where minimal disturbance to the trees can be achieved by simply upgrading the surfaces (possibly with permeable materials) and retaining the existing canopy cover.

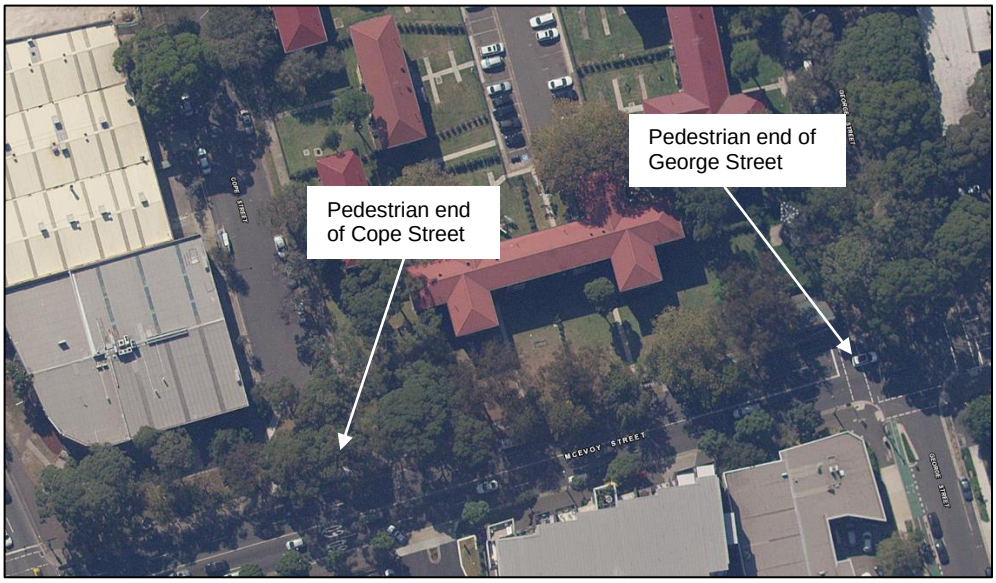

Figure 3: *Pedestrian areas at the south end of Cope and George Streets with good existing canopy cover (Source: SixMaps 2021)*

- Heritage significance has not yet been assessed for each tree.

These general precinct observations were utilised to inform the overall retention strategy for the Precinct. Efforts were further focussed on identified target areas (Section 4.2.3) where retention could be maximised.

5.2 Opportunities for Retention Assessment

5.2.1 Layout Changes

Comparison of the LAHC layout and the CoS layout (as per the original Planning Proposal) has identified adjustments to the number of trees proposed to be retained and removed. Table 5-1 summarises the results of this assessment, and Attachment D provides a map showing the canopy tree retention potential.

Table 5-1: *LAHC and CoS Comparison: Changes in Tree Retention and Removal*

Retained on CoS (removed in LAHC)	
High Value	**Moderate Value**
9	17
Removed on CoS (retained in LAHC)	
High Value	**Moderate Value**
9	17
Retention Potential (not shown on CoS plan, being removed in LAHC plan) [1]	
Low Value	**Very Low Value**
89	4

Note:
[1] As outlined in Section 4.2.1, a number of trees were identified as shown on the LAHC design but not shown on the CoS plan. The assessment has therefore assumed that where the CoS footprint encroached on the tree trunk diameter by less than 50%, the tree may be retained. No additional High or Moderate value trees were identified by applying this assumption.

5.2.2 Tree Assessment

Relevant Policy Tree Classifications

Following review of the SLEP 2012, SDCP 2012 and relevant SEPPs, the following conclusions are made in relation to the value of trees within the Site:

- The south-eastern corner of the Site (along McEvoy Street) is identified as part of Sydney's Green Grid and an Existing Green Asset (Figure 4). Areas included within the Green Grid are recognised by the Greater Sydney Commission for their value in improving lifestyles, ecological resilience and provision of open space.

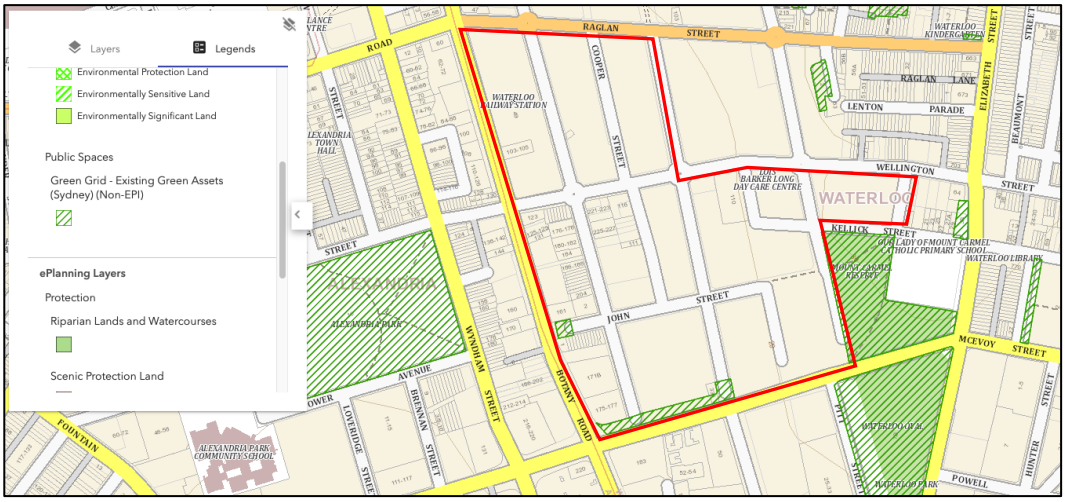

Figure 4: *Green Grid – Existing Assets along McEvoy Street within the bounds of the Site (Source: NSW Planning Portal, 2021)*

This area of the Site consists of multiple canopy trees that individually have a value of moderate to high, but as a group have a high retention value. This area of the site has therefore been identified as an opportunity for canopy retention, which is consistent with the green grid mapping intent in Figure 3.

- The Site is mapped under SEPP (Vegetation in Non-Rural Areas) 2017. This instrument aims to protect the biodiversity values of vegetation in non-rural areas of the State, and preserve the amenity of these areas through preservation of vegetation.
- Clearing of vegetation as part of any future development at the Site may require a permit from Council, and may need to be supported by preparation of a Biodiversity Development Assessment Report (BDAR) that includes recommendations for any offset requirements.
- The SLEP 2012 does not identify any specific trees as significant or for protection (for heritage value or otherwise). No vegetation is mapped as having terrestrial biodiversity value.
- The SDCP 2012 does not identify any specific trees of significance or areas of terrestrial biodiversity. The DCP includes provisions relating to specific landscaping and urban ecology, that will be required to be implemented as part of any future development at the Site.
- The SDCP 2012 requires at least 15% canopy coverage of a site within 10 years from the completion of development.

Site Inspection: Tree Value Reclassification

No amendment to the perception of high, moderate, and low trees, as per the LAHC assessment, has been applied. Some minor discrepancy exists between opinions of the Safe Useful Life Expectancy of the trees assessed, however, this is not considered to be of critical nature to the assessment or its findings.

5.2.3 Footprint Adjustments – Identified Areas of Potential

The following points summarise the main outcomes and findings of the site inspection in relation to the existing presence and conditions of canopy trees, and areas and/or trees identified as presenting an opportunity to increase tree retention across the Precinct. These findings formed the focus for discussions and collaboration with the urban design team on where footprint adjustments to the CoS scheme would achieve canopy tree retention.

- Of the 251 high to moderate value trees identified within the Site, 196 trees were reviewed throughout the southern precinct as located on public land or immediately adjoining public land. The remaining 55 trees are assumed to be within private property and inaccessible for the assessment. All accessible trees previously recommended for removal were reviewed. The review of building setbacks offers additional retention potential. Table 5-2 provides suggested setbacks to buildings/basements where trees have been identified as eligible for retention based on their size, species, location and relationship to the surrounding area. Some areas and trees of note in this regard are as follows:

  - Corner of Wellington and Gibson: T950 and T949 are worthy of retention. It is likely the building will need a greater setback from the trees.
  - Corner of Gibson and Kellick: Trees 945,944,943,942,941 and 939 are worthy of retention. It is likely the building will need a greater setback from the trees. These trees are in keeping with the Parkland tree adjoining Kellick Street.
  - John Street opposite Cooper Street: T530 is a high value deciduous tree worthy of retention, which may be achieved by providing additional residential building setback.
  - McEvoy Street frontage: presents an opportunity to retain multiple (up to 26) canopy trees assessed by Arterra as high to moderate as individuals, however as a group they are all considered to be of high value.

    The tree impacts table (Table **5-2**) recommends a 26 m setback from the southern edge of McEvoy Street to the nearest excavation. This setback was calculated by taking the two northern-most trees considered reasonable to retain (T360 and T803), then calculating a minor encroachment setback for both trees.

    The distance from the southern boundary to the northern edge of this encroachment setback equates to approximately 26 m in which all remaining trees within this 26 m corridor are situated in and could theoretically be retained.

    To retain all trees adjoining McEvoy Street (a 26 m setback from McEvoy Street would be required. It is considered that this option represents one of the best opportunities to retain existing canopy trees.

In relation to the specific target areas identified by DPIE during consultation (Section 4.2.3):

- McEvoy Street East Block – trees previously earmarked for removal have been recommended for retention through provision of additional building setbacks. As a group, trees along McEvoy Street are considered of high value. This strategy will vastly improve local amenity, canopy cover and create a vegetated ‘avenue’ between the development and the street.

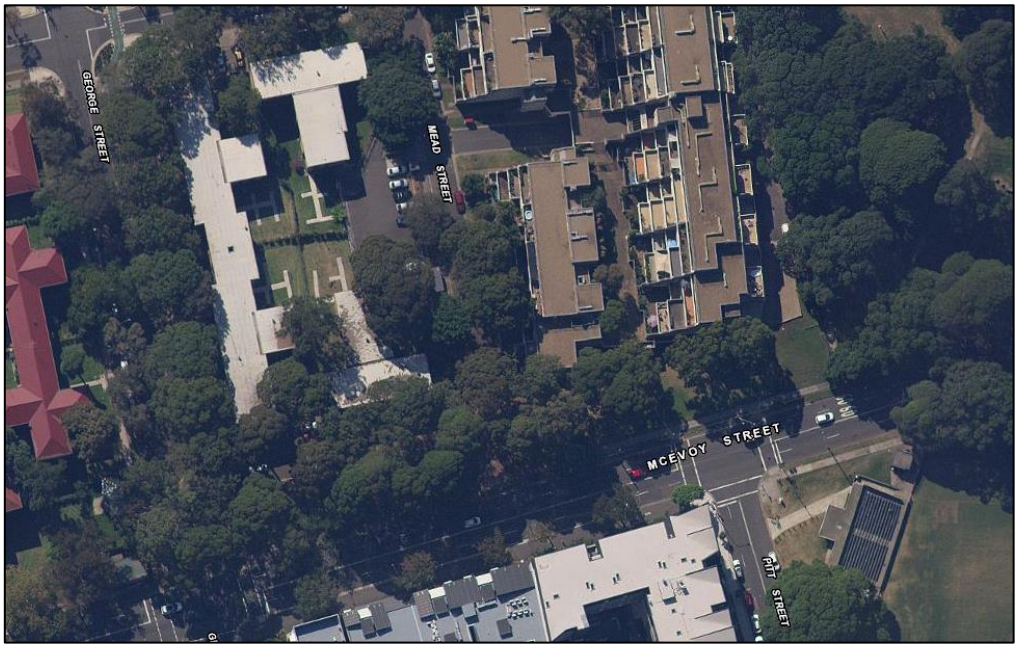

Figure 5: *McEvoy east street block, existing avenue of trees recommended for retention (Source: SixMaps, 2021)*

- North-Eastern end of Site (Wellington Street, Gibson Street and Kellick Street) – additional building setbacks have been recommended in these areas, as detailed above, in order to retain a number of trees that have been identified as having high value and providing significant canopy cover.

Figure 6: *North-eastern end of site, existing trees recommended for retention (Source: SixMaps, 2021)*

- Pitt Street North – a number of Tallowoods in this area have been identified as opportunities for retention of high value canopy trees, again through the provision of additional building setbacks.

Figure 7: *North end of Pitt Street, existing trees recommended for retention (Source: SixMaps, 2021)*

Table 5-2: *Trees identified as eligible for retention in Arborist initial assessment of CoC scheme*

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
350	Cheese Tree	*Glochidion ferdinandi*	High	4.8	2.47	Med	Residential tree adjoining public road. Tree will require minimum 3.3 m setback from proposed buildings/basements and minimal disturbance elsewhere.	Residential	None
351	Southern Blue Gum	*Eucalyptus bicostata*	High	10.8	3.31	Large	Residential tree adjoining public road. Tree will require minimum 7.5 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
353	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
354	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
355	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
360	Tallowood	*Eucalyptus microcorys*	High	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree will require minimum 5 m setback from buildings/basement and minimal disturbance elsewhere. Tree forms part of a high value group of canopy trees.	Residential	Retain as part of large group
361	Tallowood	*Eucalyptus microcorys*	High	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
362	Tallowood	*Eucalyptus microcorys*	High	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
368	Tallowood	*Eucalyptus microcorys*	Moderate	2.4	1.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by	Residential	Retain as part of large group

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
							providing a 26 m setback from McEvoy Street to the buildings/basement.		
368.1	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
369.1	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
369.2	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
369.3	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
373	Sydney Blue Gum	*Eucalyptus saligna*	Moderate	6	2.67	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
374	Sydney Blue Gum	*Eucalyptus saligna*	High	7.2	3.01	Large	Residential tree adjoining McEvoy Street. Tree will require minimum 5 m setback from buildings/basement and minimal disturbance elsewhere. Tree forms part of a high value group of canopy trees.	Residential	Retain as part of large group
377	Tallowood	*Eucalyptus microcorys*	Moderate	9.6	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
378	Tallowood	*Eucalyptus microcorys*	Moderate	9.6	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
530	London Plane	Platanus x acerifolia	High	8.4	3.01	Large	Residential tree adjoining public land. Tree will require minimum 5.9 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	Species is deciduous and tolerant of disturbance
535	London Plane	*Platanus x acerifolia*	Moderate	9.6	3.24	Large	Residential tree within existing courtyard. Tree will require minimum 6.7 m setback from buildings/basement and minimal disturbance elsewhere.	Residential	Species is deciduous and tolerant of disturbance
536	London Plane	*Platanus x acerifolia*	Moderate	9.6	3.24	Large	Residential tree within existing courtyard. Tree will require minimum 6.7 m setback from buildings/basement and minimal disturbance elsewhere.	Residential	Species is deciduous and tolerant of disturbance
562	Bangalay	*Eucalyptus botryoides*	Moderate	6	2.85	Large	Residential tree adjoining public land. Tree will require minimum 4.2 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
570	Bangalay	*Eucalyptus botryoides*	High	6	2.67	Large	Residential tree adjoining public land. Tree will require minimum 4.2 m setback from buildings/basements and minimal disturbance elsewhere.	Residential	None
583	London Plane	*Platanus x acerifolia*	Moderate	9.6	3.24	Large	Residential tree adjoining public land. Tree will require 6.7 m setback from buildings/basements and minimal disturbance elsewhere. Tree is within existing amenity garden area.	Residential	Species is deciduous and tolerant of disturbance
803	Tallowood	*Eucalyptus microcorys*	High	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
804	Tallowood	*Eucalyptus microcorys*	High	7.2	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
805	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
806	Tallowood	*Eucalyptus microcorys*	High	9.6	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
807	Tallowood	*Eucalyptus microcorys*	Moderate	9.6	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
808	Tallowood	*Eucalyptus microcorys*	Moderate	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
809	Tallowood	*Eucalyptus microcorys*	Moderate	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
810	Tallowood	*Eucalyptus microcorys*	Moderate	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
811	Tallowood	*Eucalyptus microcorys*	High	8.4	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by	Residential	Retain as part of large group

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
							providing a 26 m setback from McEvoy Street to the buildings/basement.		
813	Spotted Gum	*Corymbia maculata*	High	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
814	Sydney Blue Gum	*Eucalyptus saligna*	High	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26 m setback from McEvoy Street to the buildings/basement.	Residential	Retain as part of large group
939	Hills Weeping Fig	*Ficus microcarpa var. hillii*	High	12	3.57	Large	Public tree on large nature strip area. Tree will require 8.4 m setback from buildings/basements however the existing retaining walls may allow a smaller setback.	Public	None
941	Southern Blue Gum	*Eucalyptus bicostata*	Moderate	7.2	3.01	Large	Public tree on large nature strip area. Tree will require 5 m setback from buildings/basements and minimal disturbance elsewhere.	Public	Forms part of a group
942	Southern Blue Gum	*Eucalyptus bicostata*	Moderate	7.2	3.01	Large	Public tree on large nature strip area. Tree will require 5 m setback from buildings/basements and minimal disturbance elsewhere.	Public	Forms part of a group
943	Southern Blue Gum	*Eucalyptus bicostata*	Moderate	9.6	3.31	Large	Public tree on large nature strip area. Tree will require 6.7 m setback from buildings/basements and minimal disturbance elsewhere.	Public	Forms part of a group
944	Hills Weeping Fig	Ficus microcarpa var. hillii	Low	14.4	3.57	Large	Public tree on large nature strip area. Tree will require 10 m setback from buildings/basements however the existing retaining walls may allow a smaller setback. The tree has been subject to a major limb failure, however, is contributing to the canopy cover with T945.	Public	Consider retaining with cable brace support measures
945	Hills Weeping Fig	*Ficus microcarpa var. hillii*	High	14.4	3.57	Large	Public tree on large nature strip area. Tree will require 10 m setback from buildings/basements however the existing retaining walls may allow a smaller setback.	Public	None

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
966	Lemon Scented Gum	*Corymbia citriodora*	High	12	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimize basement excavation within 10m.	Residential	None
949	Hills Weeping Fig	*Ficus microcarpa var. hillii*	Moderate	14.4	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimise basement excavation within 10 m.	Residential	None
950	Hills Weeping Fig	*Ficus microcarpa var. hillii*	Moderate	14.4	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimise basement excavation within 10 m.	Residential	None
8512	Brush Box	Lophostemon confertus	Low	2	1.5	Large	Public tree on footpath. Young tree, recommended full 2 m setback from structures.	Public	None
8513	Tuckeroo	*Cupaniopsis anacardioides*	Low	2.4	1.85	Small	Public tree on footpath. Tree is contributing to an existing avenue of Tuckeroos. Tree will require minimum setback of 1.7 m from buildings/basements and minimal disturbance elsewhere.	Public	None
8514	Tuckeroo	*Cupaniopsis anacardioides*	Low	2	1.49	Small	Public tree on footpath. Tree is contributing to an existing avenue of Tuckeroos. Tree will require minimum setback of 1.7 m from buildings/basements and minimal disturbance elsewhere.	Public	None
8515	Tuckeroo	*Cupaniopsis anacardioides*	Moderate	2	1.68	Small	Public tree on footpath. Tree is contributing to an existing avenue of Tuckeroos. Tree will require minimum setback of 1.7 m from buildings/basements and minimal disturbance elsewhere.	Public	None
8516	Southern Hackberry	*Celtis australis*	Moderate	6	2.85	Med	Public tree on footpath. Tree will require minimum 4.2m setback from buildings/basements and minimal disturbance elsewhere.	Public	None
8573	Brush Box	Lophostemon confertus	Low	2	1.5	Large	Public tree on footpath. Young tree, recommended full 2 m setback from structures.	Public	None

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Residential/Public Tree	Additional Comments
8538	Tallowood	*Eucalyptus microcorys*	High	10.8	3.44	Large	Public tree on footpath. Tree will require minimum 7.5 m setback from buildings and basement and minimal disturbance elsewhere. Tree forms part of an avenue already proposed to be retained.	Public	None
10646	Tallowood	*Eucalyptus microcorys*	High	8.4	3.01	Large	Public tree on footpath. Tree is already encroached upon from the existing building. Recommended to retain the existing setback above ground with a setback of 6 m for any basement excavation.	Public	Surrounded by existing hard surfaces
10647	Tallowood	*Eucalyptus microcorys*	High	9	3.17	Large	Public tree on footpath. Tree is already encroached upon from the existing building. Recommended to retain the existing setback above ground with a setback of 6.3 m for any basement excavation.	Public	Surrounded by existing hard surfaces
12496	Tallowood	*Eucalyptus microcorys*	High	8.4	3.17	Large	Public tree on footpath. Tree will require minimum 5.9 m setback from buildings/basements and minimal disturbance elsewhere.	Public	None
15078	Eucalyptus botryoides	*Bangalay*	High	9.6	3.17	Large	Public tree on footpath. Tree will require minimum 6.7m setback from buildings/basements and minimal disturbance elsewhere.	Public	None
16528	Tallowood	*Eucalyptus microcorys*	High	9.6	3.17	Large	Public tree on footpath. Tree will require minimum 6.7 m setback from buildings/basements and minimal disturbance elsewhere.	Public	None
32842	Tallowood	*Eucalyptus microcorys*	High	9.6	3.31	Large	Public tree on footpath. Tree will require minimum 6.7 m setback from buildings/basements and minimal disturbance elsewhere. Tree forms part of an avenue already proposed for retention.	Public	None
32873	Tallowood	*Eucalyptus microcorys*	High	9.6	3.17	Large	Public tree on footpath. Tree will require minimum 6.7 m setback from buildings/basements and minimal disturbance elsewhere. Tree forms part of an avenue already proposed for retention.	Public	None
32882	Spotted Gum	Corymbia maculata	Moderate	2.4	1.68	Large	Public tree within existing pedestrian area. Tree will require minimum 1.7 m setback from buildings/basements and minimal disturbance elsewhere. Tree forms part of a group.	Public	Surrounded by existing pavers/hard surfaces

5.2.4 Total Additional Retention Achieved

Following consultation and collaboration between Aspect Environmental, the Project Arborist and the urban design team, the CoS scheme layout was adjusted to adopt a number of the arborist recommendations (Section 5.2.3) and therefore provide for additional tree retention – creating the 'DPIE scheme'.

Recommendations adopted within the DPIE scheme are as follows:

- Corner of Wellington and Gibson (T950 and T949): Trees have been provided a greater setback subjecting them to a tolerable level of impact from the proposed building footprint.
- Corner of Gibson and Kellick (Trees 945,944,943,942,941 and 939): Trees have been provided a greater setback subjecting them to a tolerable level of impact from the proposed building footprint.
- McEvoy Street frontage: A 9 metre setback from McEvoy Street to the proposed building was achieved rendering the retention of an additional 8 trees along the frontage. In addition, the connection between Mead Street and McEvoy has allowed for the retention of a further 3 trees.

Assessment of the DPIE scheme by the Project Arborist has confirmed that a total of 24 additional canopy trees, compared to the CoS scheme, would be retained, consisting of:

- 13 high value trees;
- 10 moderate value trees; and
- 1 low value trees (contributing to high value canopy cover).

Table 5-3 provides a summary of the trees identified as able to be retained, along with their respective value and specifications. Attachment A provides plans locating these trees.

Table 5-3: *Additional Trees Now Retained Through Recent Footprint Adjustments (DPIE Scheme)*

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Setback Adjusted To Retain Tree	New Outcome
353	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
354	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
355	Lemon Scented Gum	*Corymbia citriodora*	High	3.6	2.25	Large	Residential tree adjoining public road. Tree will require a minimum 2.5m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
361	Tallowood	*Eucalyptus microcorys*	High	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
368	Tallowood	*Eucalyptus microcorys*	Moderate	2.4	1.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
368.1	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
369.1	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
369.2	Tallowood	*Eucalyptus microcorys*	Moderate	6	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Setback Adjusted To Retain Tree	New Outcome
377	Tallowood	*Eucalyptus microcorys*	Moderate	9.6	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
803	Tallowood	*Eucalyptus microcorys*	High	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
804	Tallowood	*Eucalyptus microcorys*	High	7.2	3.01	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
806	Tallowood	*Eucalyptus microcorys*	High	9.6	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
808	Tallowood	*Eucalyptus microcorys*	Moderate	7.2	2.85	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
813	Spotted Gum	*Corymbia maculata*	High	8.4	3.17	Large	Residential tree adjoining McEvoy Street. Tree located within existing residential amenity grass area. The tree can be retained by providing a 26m setback from McEvoy Street to the buildings/basement.	Yes	Retain
942	Southern Blue Gum	*Eucalyptus bicostata*	Moderate	7.2	3.01	Large	Public tree on large nature strip area. Tree will require 5m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
943	Southern Blue Gum	*Eucalyptus bicostata*	Moderate	9.6	3.31	Large	Public tree on large nature strip area. Tree will require 6.7m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain

Tree ID	Common Name	Botanical Name	Retention value	TPZ radius (m)	SRZ radius (m)	Ultimate Tree Size/Canopy	Comments/Specification Required	Setback Adjusted To Retain Tree	New Outcome
944	Hills Weeping Fig	Ficus microcarpa var. hillii	Low	14.4	3.57	Large	Public tree on large nature strip area. Tree will require 10m setback from buildings/basements however the existing retaining walls may allow a smaller setback. The tree has been subject to a major limb failure however is contributing to the canopy cover with T945.	Yes	Retain
945	Hills Weeping Fig	*Ficus microcarpa var. hillii*	High	14.4	3.57	Large	Public tree on large nature strip area. Tree will require 10m setback from buildings/basements however the existing retaining walls may allow a smaller setback.	Yes	Retain
949	Hills Weeping Fig	*Ficus microcarpa var. hillii*	Moderate	14.4	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimize basement excavation within 10m.	Yes	Retain
950	Hills Weeping Fig	*Ficus microcarpa var. hillii*	Moderate	14.4	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimize basement excavation within 10m.	Yes	Retain
966	Lemon Scented Gum	*Corymbia citriodora*	High	12	3.57	Large	Residential tree adjoining public land. Tree Protection Zone will have been altered by the existing buildings. Recommended to retain the existing setback and minimize basement excavation within 10m.	Yes	Retain
12496	Tallowood	*Eucalyptus microcorys*	High	8.4	3.17	Large	Public tree on footpath. Tree will require minimum 5.9m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
15078	Eucalyptus botryoides	*Bangalay*	High	9.6	3.17	Large	Public tree on footpath. Tree will require minimum 6.7m setback from buildings/basements and minimal disturbance elsewhere.	Yes	Retain
32842	Tallowood	*Eucalyptus microcorys*	High	9.6	3.31	Large	Public tree on footpath. Tree will require minimum 6.7m setback from buildings/basements and minimal disturbance elsewhere. Tree forms part of an avenue already proposed for retention.	Yes	Retain

This additional retention has been achieved through a combination of:

- site inspection, to identify retention potential areas and high value trees or tree clusters/avenues; and
- collaboration with the urban design team, to balance footprint and layout requirements with enhanced environmental and social amenity outcomes, including tree canopy retention.

5.3 Management and Mitigation Measures for Tree Protection

While the additional 24 trees are now theoretically retainable, the recommended setbacks that have been adopted as part of the latest proposal, as well as consideration of indirect impacts, still have the potential to impact the health and stability of the trees. A detailed Arboricultural Impact Assessment Report will be required for each tree once the proposal is out of the preliminary design stages and detailed plans showing basements, services, levels/bulk earthworks and landscaping are available.

The following management and mitigation measures have been identified to provide for additional tree protection. Implementation of these measures during construction and operation of the Precinct will contribute to protecting trees marked for retention, and may result in the retention of additional trees. Examples of TPZ encroachment are provided in Attachment E.

- **Tree Sensitive Construction Specification**: To ensure that trees identified for retention are not adversely impacted by construction, it must be demonstrated the following design and construction specifications can be implemented within the TPZ of the trees. If construction cannot be completed in accordance with these specifications, the trees may not be viable for retention.
  - Tree sensitive fencing: Any proposed fencing within the TPZ of the trees must be installed using the tree sensitive method of post and rail type construction. To ensure the trees are not significantly impacted by the works, all post holes must be excavated manually. The post location must be flexible to avoid the severance of significant roots 40 mm and greater in diameter. No posts are to be located within the SRZ or root investigations will be required to determine the post location. All rails/horizontal materials are to be located on or above existing soil grades. This will allow for the majority of the root system to be retained between the posts, minimising root loss.
  - Underground services: *AS4970 Protection of Trees on Development Sites* (2009) recommends that all underground services located inside the TPZ of any tree to be retained should be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention.

    If directional drilling is proposed, section 4.5.5 of AS4970-2009 says that 'the directional drilling bore should be at least 600 mm deep. The project arborist should assess the likely impacts of boring and bore pits on retained trees'.1

    If manual excavations are proposed, all excavations for the services should be carried out manually under the supervision of the project

[1] Council Of Standards Australia, *AS 4970 Protection of trees on development sites* (2009) page 18.

arborist (minimum qualification AQF 5). 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. All roots greater than 40 mm in diameter should be retained in the service trench. The service pipe should then be threaded below the retained roots where practical.

Roots greater than 40 mm within the alignment of the service pipe should only be severed/pruned under the approval of the project arborist. All root pruning should be in accordance with *AS4373 Pruning of amenity trees* (2007).

Open trenching in the SRZ of trees can be impractical without impacting significant roots, as often dense root growth is present in the SRZ. Open trenching should therefore be avoided in the SRZ. It is recommended that any section of pipe that is located in the SRZ of trees to be retained is installed via sub-surface boring/directional drilling methods only.

The feasibility of sub-surface boring/directional drilling will need to be investigated by a sub-surface boring/directional drilling specialist. The project arborist should provide advice and supervise excavations for bore pits, which must be carried out manually if located within the TPZ. The top of the pipe must be at least 600 mm below the existing soil grade.

The location of bore pits should be flexible in the TPZ to avoid significant roots, the project arborist should assess and advise in writing the impact of any significant root severance to the condition of the tree.

- **Bulk Earthworks** - Soil level modifications (cut and fill): No bulk earthworks or soil level modification plan has been provided. Cut and fill can significantly impact trees, as the per following:
  - Cut: A tree's root system is generally located far shallower in the soil than is normally considered and should be thought of as a 'root plate'. The majority of a tree's root growth is usually found in the upper 600 mm of the soil closest to the surface, but a percentage of the roots will extend deeper in the soil.

    Image A (taken from AS4970-2009) has been included below and provides an example of the structure of a tree's root system. Any significant cut/lowering the soil level in the TPZ can impact the tree.

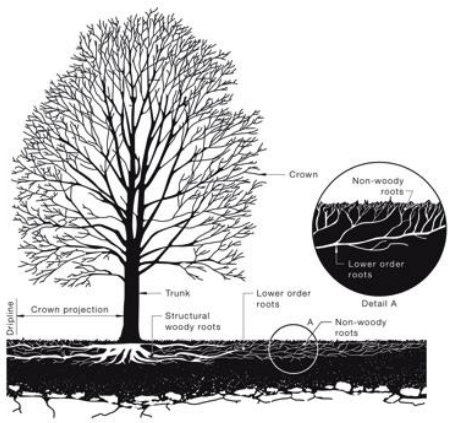

Image A: An image from AS4970-2009 showing the structure of a tree root system in normal (unobstructed) growing conditions.

The only way to identify the precise impact to a tree's root system by cut in the TPZ is by carrying out detailed root investigation to identify the individual significant roots. No detailed root investigations have been undertaken as part of the assessment.

- Fill: Tree roots require air, water and nutrients to function properly. Increasing the soil level in the TPZ can impact the trees by reducing the availability of water, nutrients and air to the trees underlying root system and can cause the decline of a trees health and vigour. Placing fill directly against the trunk of a tree can potentially cause collar rot. Collar rot forms when soil against the trunk of the tree accelerates sapwood or heartwood decay.[2]

- **Tree Sensitive Fill in the TPZ**: Fill material of less than 0.2 m will not significantly impact trees. Where fill material of more than 0.2 m is proposed in the TPZ, a structural/gap graded soil should be used that allows filtration of water, nutrients and gaseous exchange to the trees underlying root system.

  A suitable soil should consist of a mixing ratio of 80% angular size aggregate (crushed stone or coarse sand) and 20% filler soil by volume (clay loam). The aggregate size part should range from 1.5 to 2.5 cm. The filler soil should contain 2-5% organic matter by dry weight. A soil specialist will be able to provide additional information in relation to soil specifications.

- **Tree Sensitive Retaining Walls**: To reduce the impact of retaining walls, timber sleeper retaining walls should be used to avoid severing/pruning significant roots in the TPZ (no continuous strip footing). During the construction of the retaining walls, all sleepers should be located on or above existing soil grades, and piers/posts locations should be flexible to avoid significant roots (roots greater than 40 mm in diameter) that are critical to the health and stability of the tree.

  The project arborist should directly supervise the construction of retaining walls and no roots greater than 40 mm in diameter should be pruned/severed unless assessed and approved in writing by the project arborist.

- **Retaining Walls to Limit Cut and Fill in the TPZ**: Image B is an example of how a retaining wall can limit fill within the TPZ.

[2] Dunster, Julian A., Thomas Smiley, Nelda Matheny, and Sharon Lilly, *Tree Risk Assessment Manual*, Champaign, Illinois: International Society of Arboriculture (2013), page 108.

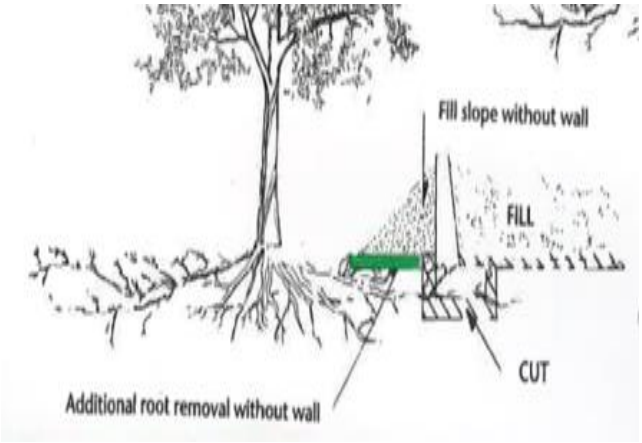

Image B: An image from A technical guide to preservation of trees during land development ,[3] showing how retaining walls can be used to limit fill inside the TPZ.

- **Tree Sensitive Hard Surfacing Construction**: Hard surfacing within the TPZ of the trees should be constructed using a tree sensitive method. The hard surfacing should be constructed above existing grades in the TPZ of the trees. Image C provides an example of a no-excavation method for constructing hard surfacing close to trees. The location of retaining pegs should be flexible, avoiding damage to structural roots.

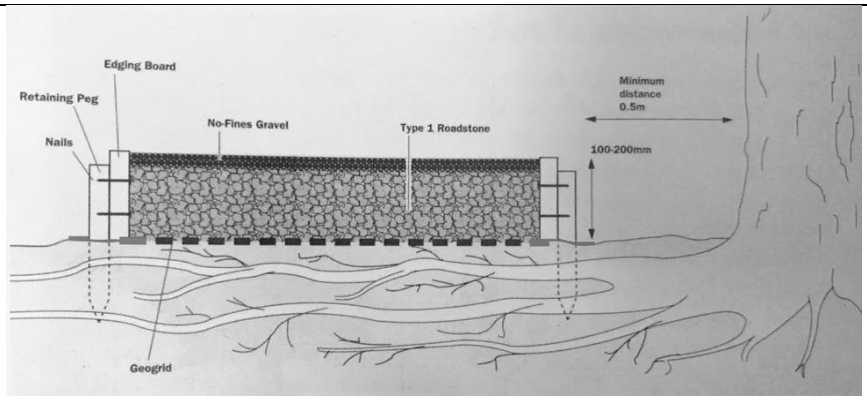

Image C: An image from 'Tree Roots in the Built Environment'[4], showing how to construct hard surfacing above a tree's root system without excavation. Type 1 Roadstones are an example of blue metal or crushed sandstone.

If excavations are essential, they must not exceed 100 mm below the existing grades. The excavations should be supervised by a project arborist with a minimum AQF level 5 qualification. All excavations for the hard surfacing should be carried out manually to avoid impacting retained tree roots.

All tree roots greater than 40 mm in diameter should be retained unless the project arborist has assessed and advised that the pruning/severing of the root will not impact the condition or stability of the tree. Manual excavation may

[3] Matheny, N. & Clark, J. R, *A technical guide to preservation of trees during land development*, International Society of Arboriculture, P.O Box 3029, Champaign, IL, USA (1998), page 98.

[4] Roberts, J., Jackson, N., & Smith, M., *Tree Roots in the Built Environment*, The Stationary Office, London, England (2006).
Page 305 & 306.

include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device.

Where tree roots greater than 40 mm are encountered that must be retained, the hard surfacing should be elevated over the individual tree root to allow for its retention. Examples of methods that can be used to bridge individual tree roots have been included below (Images D and E). Using pier and beam bridges as per Image E is the recommended/preferred method, as it will allow for future growth of the tree roots, reducing future damage to the surfacing from the roots.

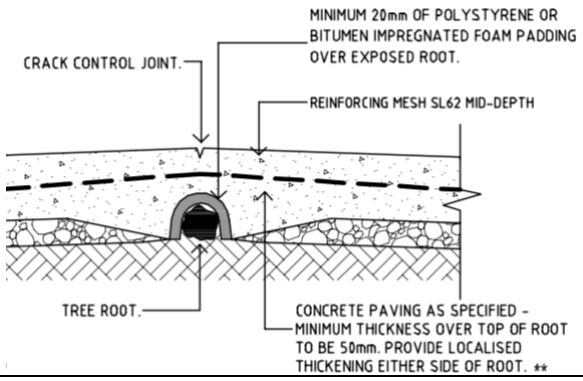

Image D: Example method for bridging concrete surfacing over tree roots provided in the Canterbury Bankstown Council standard drawings.[5]

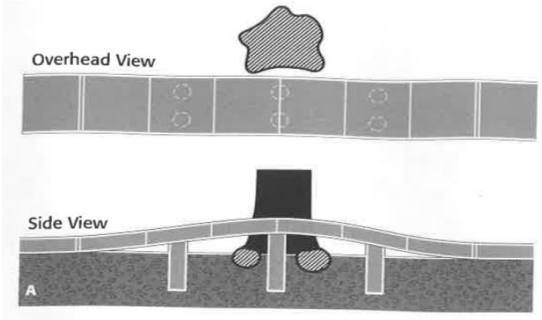

Image E: Example method from *Reducing infrastructure damage by tree roots: A compendium of strategies*.[6]

- **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 AS4970-2009 to be the extent 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

[5] *Canterbury Bankstown Council standard drawing S-209 Existing street tree treatments*, https://www.cbcity.nsw.gov.au/development/planning-control-policies/council-standard-drawings, accessed 3 October 2019.

[6] Costello, L. R., & Jones, K. S, *Reducing infrastructure damage by tree roots: A compendium of strategies*, Western Chapter of the International Society of Arboriculture, 31883 Success Valley Drive, Porterville, CA (2003), page 27.

tree protection also incorporates the SRZ (see below for more information about the SRZ).

- **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the tree's stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. 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.
- **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.

5.4 Canopy Trees in Courtyards

A preliminary assessment of opportunities and risks, and potential strategies in relation to planting of canopy trees in shared courtyards of individual block units has been considered. Lead consideration points have been summarised in Table 5-4.

Table 5-4: *Lead consideration points for canopy trees within courtyard areas*

Consideration aspect	Opportunities	Risks	Strategies
Depth of soil	As landscape soils will generally have to be imported, appropriate soil structure and quality can be established in courtyard areas to support the development of canopy trees.	Soil depth may not be sufficient to support continued growth of canopy trees, in particular over areas used for basements/ underground car parking. Canopy tree plantings within courtyard areas would need to be restricted to species which are more tolerant of shallower garden beds.	Consider canopy tree species appropriate to soil depth.
Building height (courtyard surrounds)	Canopy trees soften the appearance of large structures and represent an established landscape.	Increased building heights or depths can slow, restrict or alter the growth rates/habits of trees due to limited or	Consider species that require less resources or trees with a broad canopy and low mature height.

Consideration aspect	Opportunities	Risks	Strategies
	Canopy trees contribute to reduction of urban heat island (UHI) effects from direct and indirect heating sources (ie direct and indirect solar and ambient air flow).	changed available resources. Changes in wind tunnelling, and radiated heat from buildings can also have a negative impact on existing trees.	
Tree species	Species which may mature at a small to medium size may potentially have greater viability success.	Modifications to (optimum) tree development size for existing plantings is limited.	Small to medium size trees will have a greater chance of success within courtyards in the long term. Species and location of existing trees within courtyard areas will influence long term viability.
Solar access	Deciduous trees will provide a seasonal variation in tree aesthetics and solar availability.	Canopy trees will reduce the level of solar access to courtyards to a degree in both summer and winter.	Consider deciduous species of trees that will allow more light in the winter but more shade in the summer. Consider if canopy or 'shade' trees are suitable for courtyard plantings given the buildings will already be restricting sunlight to courtyards.
Location of existing canopy trees or canopy tree plantings	There would be shade (UHI) benefit in offsetting the location of canopy trees in a courtyard to the areas that receive the more extreme sunlight hours (west).	Tree species selection would need to be tolerant of the western sun (as well as radiated heat from the buildings) in addition to the restrictions of courtyard landscaping. It may be more difficult to establish planted trees in these locations.	Specific selection of species and orientation within the courtyard, to potentially provide a better viability outcome.
Setbacks from buildings or landscape infrastructure	Considering requirements at an early stage can reduce conflict between structures and enable long term retention of trees and structures.	Potential displacement of structures/footings. Irregular or poor development of roots causing low vigour or stability issues.	Largely dependent on size of tree and species. Recommended not to plant *Ficus* species close to structures. Planting at a setback for 2-3 m may reduce the risk of conflict with some species. Installing root barriers or structural cells that allow the development of tree roots away from, below or alongside structures without conflict.

5.4.1 Other Considerations

Time taken for trees to reach mature height should be considered in relation to the objective or outcome intended from the planting. The Apartment Design Guide (ADG) (currently part of SEPP 65 – Design Quality of Residential Apartment Development) describes 'large trees' as having a mature height of up to 18 m, with a 16 m canopy spread. The ADG describes medium size trees as up to 12 m high with an 8 m canopy spread.

The significance of the large vs small to medium size of the tree is that it will take less time to mature and generally require fewer resources. Selection of small to medium-sized trees may provide a better outcome strictly for internal courtyard areas where less resource support is required to achieve comparable cooling and amenity outcomes.

Large (canopy) trees are particularly effective on exterior western boundaries to assist with shade and managing western microclimates, while also softening the precinct gateway or external precinct façade of the development.

5.5 Study Limitations and Next Steps

The information provided in the recommended table of impacts (Table **5-2**) was based on the CoS building footprints provided for the purpose of this assessment and is limited to the detail that has been provided.

In consideration of the outcomes and recommendations of this assessment, the following is of note:

- Tree numbers and locations have been applied using GPS location on site, georeferenced site plans and the PDF document prepared by Arterra. The exact location of trees and potentially numbering may vary.
- The tree inspections were 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.
- Hugh The Arborist neither guarantees, nor is responsible for, the accuracy of information provided by others that is contained within this report.
- Canopy projection has been estimated based on the individual tree's mature size.
- The tree inspection schedule prepared by Arterra has been used for the basis of this assessment. The tree data contained within the tree inspection schedule showed minor inconsistencies at the time of the inspection of 198 trees subject to this assessment. However, a detailed analysis of the Arterra data is not in the scope of this assessment and complete accuracy cannot be guaranteed.
- No trees located to the rear of or within existing residential courtyards have been assessed due to trespass issues. Only trees located on or immediately adjoining public land have been assessed.
- Where access was limited due to unauthorised access, trees may have only been assessed from one viewpoint. 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.

Following review of the recommendations and outcomes of this assessment, the CoS layout was adjusted to create the DPIE scheme, which achieves the additional retention documented in Section 5.2.4.

Should the layout be further adjusted or amended, further assessment would be required to refine and therefore confirm final tree retention/removal numbers for the Proposal.

6 CONCLUSIONS

This Addendum Urban Forest Study has been prepared to support an updated Planning Proposal for proposed amendments to the SLEP 2012 which seek to allow the redevelopment of the Waterloo Estate (South). It addresses the NSW DPIE Gateway Determination requirements, specifically those in Table 1 requires that:

> an *addendum to the Urban Forest Study (prepared by Arterra in March 2020 for LAHC) be prepared to address the Council concept, including opportunities to retain additional canopy trees.*

Reconsideration of the tree retention potential across the Site included a site inspection, completed by qualified arborist, and identification of areas where potential tree retention should be further investigated. A consultation and collaboration process was undertaken between the arborist, Aspect Environmental and the urban design team to identify these areas of potential and discuss what adjustments to the building footprint or layout could be made in order to maximise tree canopy retention.

Following adoption of a number of the recommendations provided by the Project Arborist, and subsequent amendments to the CoS scheme, the DPIE scheme was created. This revised scheme provides for an overall improvement in the canopy cover of the Precinct – with an additional 24 trees being able to be retained.

Maximising tree retention potential is based on implementation of the DPIE scheme, as well as the management and mitigation measures outlined in Section 5.3, and subject to the limitations of the assessment approach as identified in Section 5.5.

Recommendations for canopy tree planting/retention within courtyards have also been provided to assist with landscape design in these areas of the proposed development site.

7 REFERENCES

Arterra (March 2020) *Waterloo Estate South Urban Forest Study*

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NSW DPIE (June 2021) *Gateway Determination: Planning Proposal PP_2021_3265*

Roberts, J., Jackson, N., & Smith, M., Tree Roots in the Built Environment, The Stationary Office, London, England (2006).

State Environmental Planning Policy (Vegetation in Non Rural Areas) 2017

8 ATTACHMENT A – TREE LOCATION PLANS, WATERLOO SOUTH PRECINCT (HUGH THE ARBORIST, 2021)

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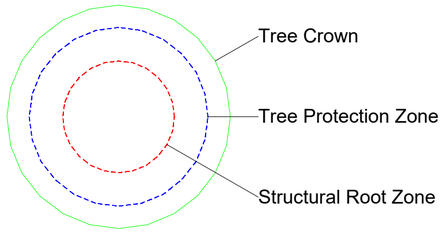
Waterloo South precinct NSW

SCALE :	DATE :
1 : 1000 @ A2	9/11/2021

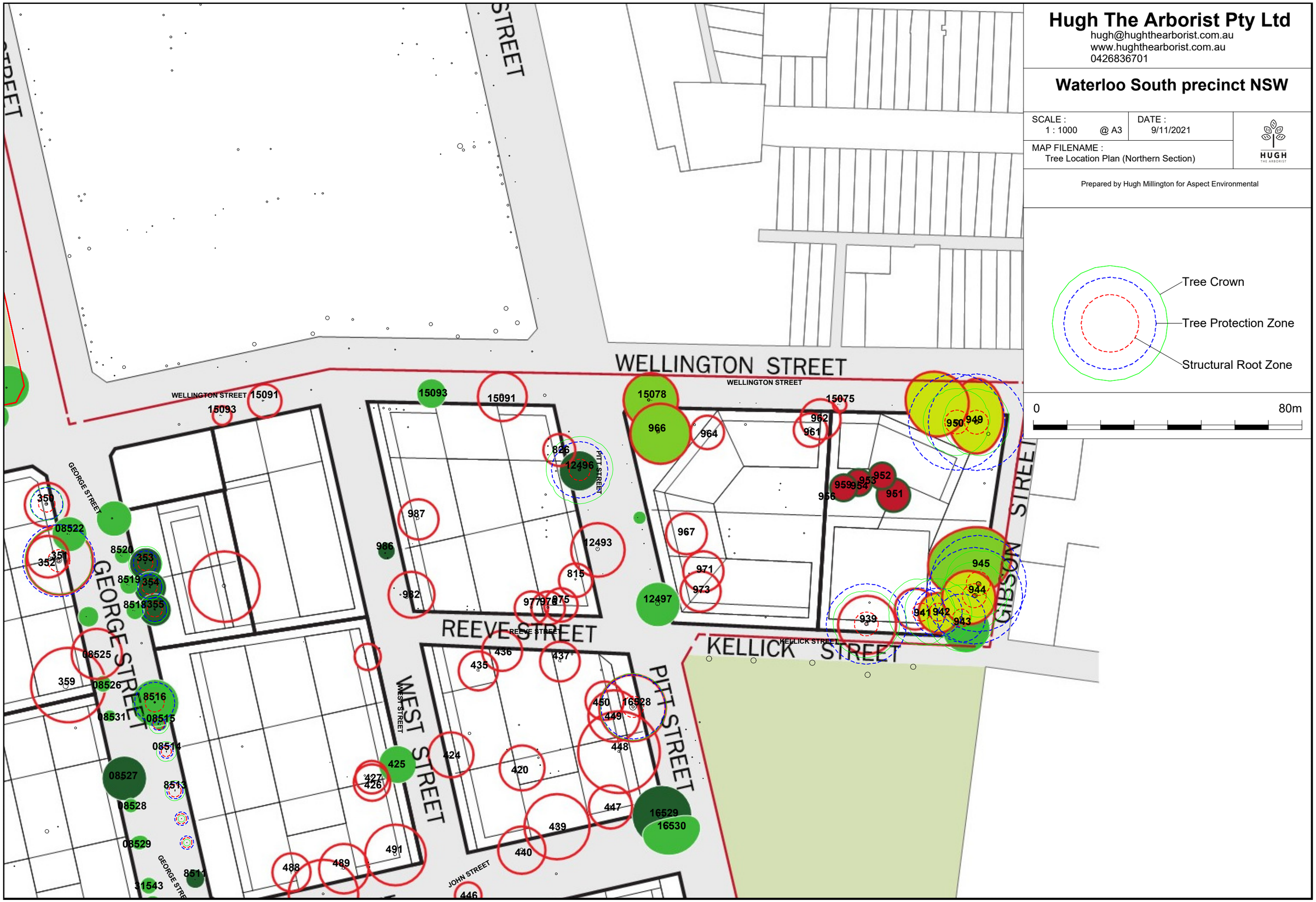
MAP FILENAME : Additional Tree Retention Through Foorprint Adjustment

HUGH THE ARBORIST

Drawn By Hugh Millington
for Aspect Environmental



0 120m



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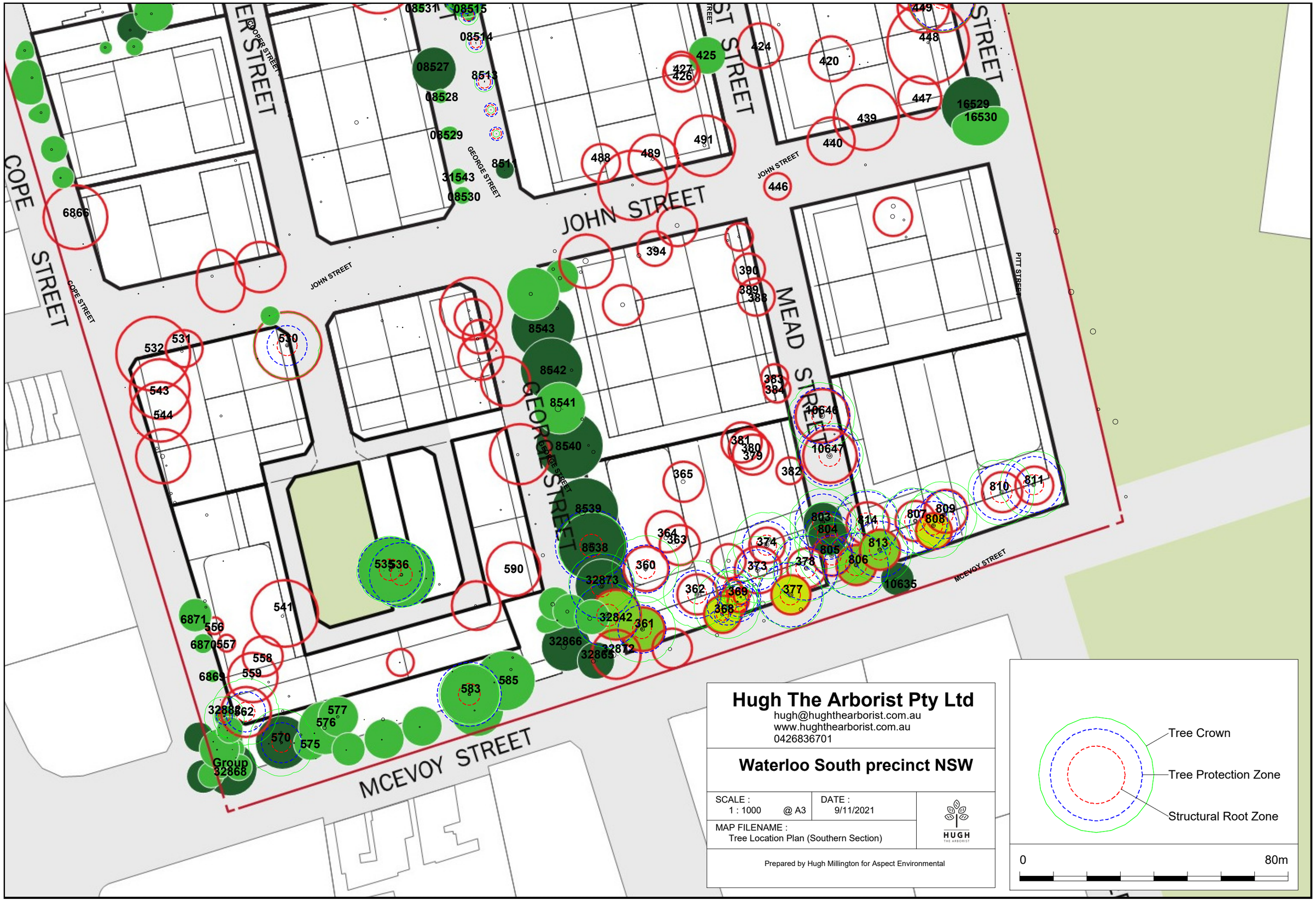
SCALE : 1 : 1000 @ A3

DATE : 9/11/2021

MAP FILENAME : Tree Location Plan (Northern Section)

HUGH THE ARBORIST

Prepared by Hugh Millington for Aspect Environmental



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SCALE :	DATE :
1 : 1000 @ A3	9/11/2021

MAP FILENAME :
Tree Location Plan (Southern Section)

Prepared by Hugh Millington for Aspect Environmental

9 ATTACHMENT B – TREE RETENTION VALUE PLANS, WATERLOO SOUTH PRECINCT (HUGH THE ARBORIST, 2021)

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SCALE : 1 : 1000 @ A2	DATE : 10/11/2021	HUGH THE ARBORIST
MAP FILENAME : Additional Tree Retention Through Foorprint Adjustment		

Drawn By Hugh Millington
for Aspect Environmental

- High Value Tree
- Moderate Value Tree
- Low Value Tree

0 — 120m

WELLINGTON STREET
WELLINGTON STREET
GTON STREET
COOPER STREET
GEORGE STREET
REEVE STREET
WEST STREET
PITT STREET
KELLICK STREET
GIBSON STREET
JOHN STREET
MEAD STREET
GEORGE STREET
MCEVOY STREET
MCEVOY STREET

15078
966
12496
950
949
353
354
355
945
944
942
943
803
804
808
813
806
377
369
368
369.2
368
32842
361

10 ATTACHMENT C – TREES ASSESSED, WATERLOO SOUTH PRECINCT (HUGH THE ARBORIST, 2021)

Tree ID	Precinct	Tree Species	Common Name	Family	Height (m)	Trunk Diameter at Breast Height (dbh) (m)	Trunk Diameter at base (dgl) (m)	Nominal TPZ radius (m) 12xdbh (AS 4970)	Nominal SRZ radius (m) (AS 4970)	Age Class	Current Vigour	Current Form	Noted Defects	SULE Rating	Retention Value	General Comments and Notes	Tree Origin	Ultimate Tree Size	Tree Type	Planning Proposal Recommendation
199	**S**	*Ficus microcarpa var. hillii*	**Hills Weeping Fig**	**MORACEAE**	20	1.4	1.6	15	4.03	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	**Retain**
201	**S**	*Ficus microcarpa var. hillii*	**Hills Weeping Fig**	**MORACEAE**	20	1.4	1.6	15	4.03	Mature	Good	Good	Major Inclusions	Long (>40 years)	**High**		Native	Civic	Evergreen	**Retain**
202	**S**	*Ficus microcarpa var. hillii*	**Hills Weeping Fig**	**MORACEAE**	20	1.4	1.6	15	4.03	Mature	Good	Good	Major Inclusions	Long (>40 years)	**High**		Native	Civic	Evergreen	**Retain**
341	**S**	*Jacaranda mimosifolia*	**Jacaranda**	**BIGNONIACEAE**	11	0.3	0.4	3.6	2.25	Mature	Good	Good		Long (>40 years)	**High**		Exotic	Medium	Deciduous	**Retain**
350	**S**	*Glochidion ferdinandi*	**Cheese Tree**	**EUPHORBIACEAE**	9	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	Remove
351	**S**	*Eucalyptus bicostata*	**Southern Blue Gum**	**MYRTACEAE**	20	0.9	1	10.8	3.31	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
352	**S**	*Lophostemon confertus*	**Brush Box**	**MYRTACEAE**	20	0.9	1	10.8	3.31	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
353	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	18	0.3	0.4	3.6	2.25	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
354	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	20	0.3	0.4	3.6	2.25	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
355	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	20	0.3	0.4	3.6	2.25	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
356	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	22	0.8	0.9	9.6	3.17	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
359	**S**	*Eucalyptus bicostata*	**Southern Blue Gum**	**MYRTACEAE**	20	1.5	1.8	15	4.24	Mature	Good	Good	Excessively Pruned	Long (>40 years)	**High**	Much epicormic growth from base.	Native	Large	Evergreen	**Retain**
360	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
361	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.6	0.7	7.2	2.85	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
362	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.6	0.7	7.2	2.85	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
363	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Good		Long (>40 years)	**Moderate**	Closely spaced group	Native	Large	Evergreen	**Retain**
364	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Good		Long (>40 years)	**Moderate**	Closely spaced group	Native	Large	Evergreen	**Retain**
365	**S**	*Casuarina cunninghamiana*	**River She-Oak**	**CASUARINACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	Remove
368	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.2	0.25	2.4	1.85	Mature	Good	Average		Long (>40 years)	**Moderate**	Closely spaced group, one large one smaller.	Native	Large	Evergreen	Remove
368.1	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**	Closely spaced group, one large one smaller.	Native	Large	Evergreen	Remove
369.1	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**	Closely spaced group, all very close	Native	Large	Evergreen	Remove
369.2	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**	Closely spaced group, all very close	Native	Large	Evergreen	Remove
369.3	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.5	0.7	6	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**	Closely spaced group, all very close together.	Native	Large	Evergreen	Remove
373	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	22	0.5	0.6	6	2.67	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Civic	Evergreen	Remove
374	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	22	0.6	0.8	7.2	3.01	Mature	Good	Average		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
377	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	22	0.8	0.8	9.6	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
378	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	22	0.8	0.8	9.6	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
379	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.4	0.4	4.8	2.25	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
380	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.4	0.4	4.8	2.25	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
381	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.4	0.4	4.8	2.25	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
382	**S**	*Ficus rubiginosa*	**Port Jackson Fig**	**MORACEAE**	10	0.6	0.6	7.2	2.67	Semi-mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
383	**S**	*Agonis flexuosa*	**Willow Myrtle**	**MYRTACEAE**	7	0.8	0.8	9.6	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove

384	**S**	*Agonis flexuosa*	**Willow Myrtle**	**MYRTACEAE**	7	0.8	0.8	9.6	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
388	**S**	*Ficus rubiginosa*	**Port Jackson Fig**	**MORACEAE**	10	0.4	0.5	4.8	2.47	Mature	Good	Good	Excessively Pruned	Long (>40 years)	**Moderate**	Part of a tightly spaced grouping	Native	Large	Evergreen	Remove
389	**S**	*Ficus rubiginosa*	**Port Jackson Fig**	**MORACEAE**	10	0.4	0.5	4.8	2.47	Mature	Poor	Suppressed	Excessively Pruned	Long (>40 years)	**Low**	Part of a tightly spaced grouping	Native	Large	Evergreen	Remove
390	**S**	*Ficus rubiginosa*	**Port Jackson Fig**	**MORACEAE**	9	0.4	0.5	4.8	2.47	Mature	Good	Average	Excessively Pruned	Long (>40 years)	**Moderate**	Part of a tightly spaced grouping	Native	Large	Evergreen	Remove
394	**S**	*Casuarina cunninghamiana*	**River She-Oak**	**CASUARINACEAE**	12	0.5	0.5	6	2.47	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
420	**S**	*Melaleuca quinquenervia*	**Broad Leafed Paperbark**	**MYRTACEAE**	18	0.7	0.7	8.4	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**		Endemic	Medium	Evergreen	Remove
424	**S**	*Lophostemon confertus*	**Brush Box**	**MYRTACEAE**	17	0.7	0.7	8.4	2.85	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	**Retain**
425	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	17	0.25	0.25	3	1.85	Semi-mature	Fair	Good		Long (>40 years)	**Moderate**		Native	Civic	Evergreen	Remove
426	**S**	*Casuarina glauca*	**Swamp She-Oak**	**CASUARINACEAE**	20	0.4	0.6	4.8	2.67	Mature	Good	Good		Long (>40 years)	**Moderate**	Part of tightly spaced group of three.	Endemic	Medium	Evergreen	Remove
427	**S**	*Casuarina glauca*	**Swamp She-Oak**	**CASUARINACEAE**	20	0.4	0.6	4.8	2.67	Mature	Good	Average		Long (>40 years)	**Moderate**	Some tip dieback. Part of tightly spaced group of three.	Endemic	Medium	Evergreen	Remove
435	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	22	0.7	0.8	8.4	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
436	**S**	*Melaleuca quinquenervia*	**Broad Leafed Paperbark**	**MYRTACEAE**	18	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Endemic	Medium	Evergreen	Remove
437	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	20	0.8	0.9	9.6	3.17	Mature	Good	Good		Long (>40 years)	**High**		Endemic	Large	Evergreen	Remove
439	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	22	0.5	0.6	6	2.67	Mature	Fair	Good		Long (>40 years)	**Moderate**		Native	Civic	Evergreen	Remove
440																				
443	**S**	*Corymbia maculata*	**Spotted Gum**	**MYRTACEAE**	19	0.4	0.45	4.8	2.37	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
446	**S**	*Melaleuca quinquenervia*	**Broad Leafed Paperbark**	**MYRTACEAE**	15	0.9	1.2	10.8	3.57	Mature	Good	Good		Long (>40 years)	**High**	3 Intergrown trees in one. Considered as one tree although probably 3 individuals planted close together.	Endemic	Medium	Evergreen	**Retain**
447	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	16	0.4	0.6	4.8	2.67	Mature	Good	Good		Long (>40 years)	**Moderate**		Endemic	Large	Evergreen	Remove
448	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	22	0.6	0.8	7.2	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
449	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	23	0.4	0.6	4.8	2.67	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Civic	Evergreen	Remove
450	**S**	*Melaleuca quinquenervia*	**Broad Leafed Paperbark**	**MYRTACEAE**	20	0.8	0.8	9.6	3.01	Mature	Good	Good		Long (>40 years)	**Moderate**		Endemic	Medium	Evergreen	Remove
462	**S**	*Buckinghamia celsissima*	**Ivory Curl Tree**	**PROTEACEAE**	10	0.2	0.2	2.4	1.68	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
472	**S**	*Sapium sebiferum*	**Chinese Tallow Tree**	**SAPINDACEAE**	9	0.25	0.3	3	2	Mature	Good	Good		Long (>40 years)	**Moderate**		Exotic	Medium	Deciduous	**Retain**
473	**S**	*Eucalyptus pseudoglobulous*	**Gippsland Blue Gum**	**MYRTACEAE**	15	0.6	0.7	7.2	2.85	Mature	Good	Good		Long (>40 years)	**Moderate**		Native	Large	Evergreen	**Retain**
484	**S**	*Calodendrum capense*	**Cape Chestnut**	**RUTACEAE**	9	0.3	0.4	3.6	2.25	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Medium	Evergreen	**Retain**
488	**S**	*Corymbia citriodora*	**Lemon Scented Gum**	**MYRTACEAE**	22	0.4	0.45	4.8	2.37	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Civic	Evergreen	Remove
489	**S**	*Casuarina cunninghamiana*	**River She-Oak**	**CASUARINACEAE**	22	0.6	0.8	7.2	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	Remove
491	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	25	0.7	0.9	8.4	3.17	Mature	Good	Good		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
521																				
522	**S**	*Flindersia australis*	**Crows Ash**	**RUTACEAE**	12	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	**Retain**
523																				

530	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	18	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	**High**		Exotic	Large	Deciduous	Remove
530	S	Platanus x acerifolia	London Plane	PLATANACEAE	18	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	High		Exotic	Large	Deciduous	Remove
531	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	14	0.5	0.65	6	2.76	Mature	Good	Average		Long (>40 years)	**High**		Exotic	Large	Deciduous	**Retain**
532	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	20	0.8	0.95	9.6	3.24	Mature	Good	Average		Long (>40 years)	**High**		Exotic	Large	Deciduous	**Retain**
535	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	20	0.8	0.95	9.6	3.24	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Large	Deciduous	Remove
536	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	20	0.8	0.95	9.6	3.24	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Large	Deciduous	Remove
541	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	18	0.6	0.8	7.2	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Large	Deciduous	**Retain**
543	**S**	*Eucalyptus robusta*	**Swamp Mahogany**	**MYRTACEAE**	15	0.4	0.5	4.8	2.47	Mature	Fair	Average		Long (>40 years)	**Moderate**		Endemic	Medium	Evergreen	**Retain**
544	**S**	*Agonis flexuosa*	**Willow Myrtle**	**MYRTACEAE**	10	0.9	1.2	10.8	3.57	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
556	**S**	*Araucaria columnaris*	**Cook Pine**	**ARAUCARIACEAE**	20	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Exotic	Civic	Conifer	**Retain**
557	**S**	*Araucaria columnaris*	**Cook Pine**	**ARAUCARIACEAE**	20	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Exotic	Civic	Conifer	**Retain**
558	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	22	0.4	0.5	4.8	2.47	Mature	Good	Average		Long (>40 years)	**Moderate**		Endemic	Large	Evergreen	Remove
559	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	22	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Endemic	Large	Evergreen	Remove
562	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	19	0.5	0.7	6	2.85	Mature	Fair	Average		Long (>40 years)	**Moderate**		Endemic	Large	Evergreen	Remove
570	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	15	0.5	0.6	6	2.67	Mature	Good	Average		Long (>40 years)	**High**		Endemic	Large	Evergreen	Remove
575	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	14	0.5	0.6	6	2.67	Mature	Fair	Average		Long (>40 years)	**Moderate**		Endemic	Large	Evergreen	**Retain**
576	**S**	*Eucalyptus scoparia*	**Wallangarra White Gum**	**MYRTACEAE**	16	0.5	0.6	6	2.67	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
577	**S**	*Eucalyptus scoparia*	**Wallangarra White Gum**	**MYRTACEAE**	16	0.3	0.4	3.6	2.25	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
583	**S**	*Platanus x acerifolia*	**London Plane**	**PLATANACEAE**	18	0.8	0.95	9.6	3.24	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Large	Deciduous	Remove
585	**S**	*Eucalyptus scoparia*	**Wallangarra White Gum**	**MYRTACEAE**	16	0.7	0.7	8.4	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
590	**S**	*Casuarina cunninghamiana*	**River She-Oak**	**CASUARINACEAE**	22	0.5	0.6	6	2.67	Mature	Good	Good		Long (>40 years)	**Moderate**		Native	Medium	Evergreen	Remove
591	**S**	*Corymbia maculata*	**Spotted Gum**	**MYRTACEAE**	12	0.5	0.6	6	2.67	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
592	**S**	**Corymbia maculata**	**Spotted Gum**	**MYRTACEAE**	**12**	**0.35**	**0.4**	**4.2**	**2.25**	**Mature**	**Good**	**Average**		**Long (>40 years)**	**Moderate**		**Native**	**Large**	**Evergreen**	**Retain**
593	**S**	*Waterhousea floribunda*	**Weeping Lilly Pilly**	**MYRTACEAE**	9	0.4	0.5	4.8	2.47	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	**Retain**
594	**S**	*Magnolia grandiflora*	**American Bull Bay Magnol**	**MAGNOLIACEAE**	7	0.2	0.2	2.4	1.68	Semi-mature	Good	Good		Long (>40 years)	**Moderate**		Exotic	Small	Evergreen	Remove
595	**S**	*Magnolia grandiflora*	**American Bull Bay Magnol**	**MAGNOLIACEAE**	6	0.15	0.15	2	1.49	Semi-mature	Good	Good		Long (>40 years)	**Moderate**		Exotic	Small	Evergreen	Remove
803	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.7	0.9	8.4	3.17	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
804	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.6	0.8	7.2	3.01	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
805	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.5	0.7	6	2.85	Mature	Fair	Suppressed		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
806	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
807	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.8	0.9	9.6	3.17	Mature	Good	Average	Excessively Pruned	Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
808	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
809	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.6	0.7	7.2	2.85	Mature	Fair	Average	Excessively Pruned	Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
810	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.7	0.9	8.4	3.17	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
811	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.7	0.8	8.4	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
813	**S**	*Corymbia maculata*	**Spotted Gum**	**MYRTACEAE**	17	0.7	0.9	8.4	3.17	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
814	**S**	*Eucalyptus saligna*	**Sydney Blue Gum**	**MYRTACEAE**	17	0.7	0.9	8.4	3.17	Mature	Good	Average		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
815	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	18	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
826	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	18	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
939	**S**	*Ficus microcarpa var. hillii*	**Hills Weeping Fig**	**MORACEAE**	20	1	1.2	12	3.57	Mature	Good	Average		Long (>40 years)	**High**		Native	Civic	Evergreen	Remove
941	**S**	*Eucalyptus bicostata*	**Southern Blue Gum**	**MYRTACEAE**	20	0.6	0.8	7.2	3.01	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove
942	**S**	*Eucalyptus bicostata*	**Southern Blue Gum**	**MYRTACEAE**	20	0.6	0.8	7.2	3.01	Mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Large	Evergreen	Remove

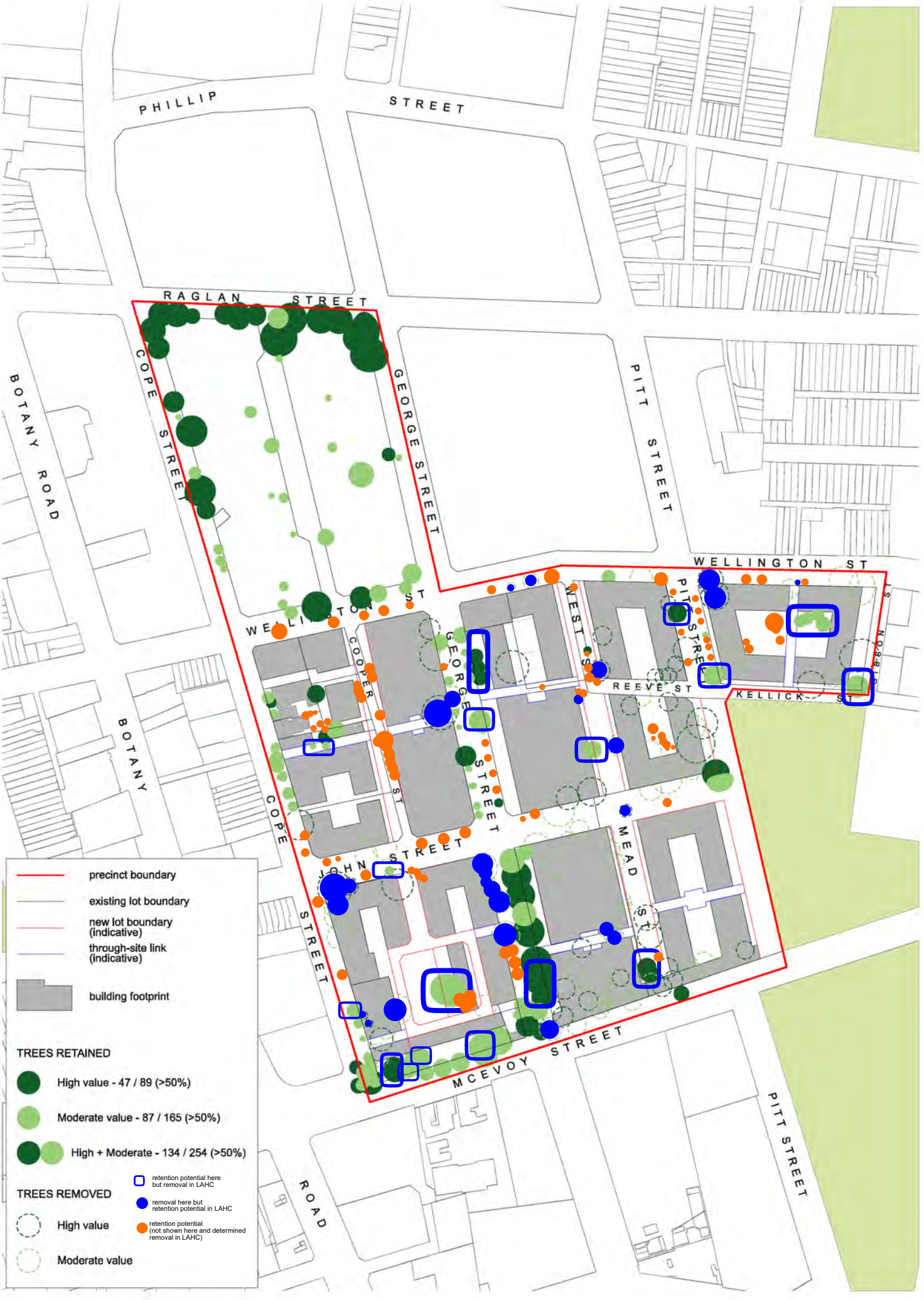
943	S	*Eucalyptus bicostata*	Southern Blue Gum	MYRTACEAE	21	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	Moderate		Native	Large	Evergreen	Remove
944	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	20	1.2	1.2	14.4	3.57	Mature	Fair	Poor	Very Asymmetric Canopy, Major Inclusions	Short (5-15 years)	Low		Native	Civic	Evergreen	Remove
945	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	20	1.2	1.2	14.4	3.57	Mature	Excellent	Average		Long (>40 years)	High		Native	Civic	Evergreen	Remove
949	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	18	1.2	1.2	14.4	3.57	Mature	Good	Poor	Very Asymmetric Canopy	Long (>40 years)	Moderate		Native	Civic	Evergreen	Remove
950	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	18	1.2	1.2	14.4	3.57	Mature	Good	Poor	Very Asymmetric Canopy	Long (>40 years)	Moderate		Native	Civic	Evergreen	Remove
951	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.5	0.6	6	2.67	Semi-mature	Good	Average		Long (>40 years)	Moderate		Exotic	Large	Deciduous	Remove
952	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.4	0.5	4.8	2.47	Semi-mature	Good	Average		Long (>40 years)	Moderate		Exotic	Large	Deciduous	Remove
953	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.3	0.4	3.6	2.25	Semi-mature	Fair	Average		Long (>40 years)	Low		Exotic	Large	Deciduous	Remove
954	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.4	0.5	4.8	2.47	Semi-mature	Good	Average		Long (>40 years)	Moderate		Exotic	Large	Deciduous	Remove
955	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.4	0.4	4.8	2.25	Semi-mature	Good	Average		Long (>40 years)	Moderate		Exotic	Large	Deciduous	Remove
956	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	13	0.3	0.4	3.6	2.25	Semi-mature	Fair	Poor		Long (>40 years)	Low		Exotic	Large	Deciduous	Remove
961	S	*Angophora floribunda*	Rough-barked Apple	MYRTACEAE	16	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	Moderate		Endemic	Large	Evergreen	Remove
962	S	*Eucalyptus bicostata*	Southern Blue Gum	MYRTACEAE	16	0.7	0.8	8.4	3.01	Mature	Fair	Average		Long (>40 years)	Moderate		Native	Large	Evergreen	Remove
964	S	*Eucalyptus bicostata*	Southern Blue Gum	MYRTACEAE	14	0.6	0.8	7.2	3.01	Mature	Good	Average	Excessively Pruned, Lean-Major	Medium (15-40 years)	Moderate		Native	Large	Evergreen	Remove
966	S	*Corymbia citriodora*	Lemon Scented Gum	MYRTACEAE	20	1	1.2	12	3.57	Mature	Excellent	Good		Long (>40 years)	High		Native	Civic	Evergreen	Retain
967	S	*Platanus x acerifolia*	London Plane	PLATANACEAE	15	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	Moderate		Exotic	Large	Deciduous	Remove
971	S	Eucalyptus bicostata	Southern Blue Gum	MYRTACEAE	14	0.6	0.8	7.2	3.01	Mature	Good	Average	Excessively Pruned	Long (>40 years)	Moderate		Native	Large	Evergreen	Remove
973	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	15	0.3	0.4	3.6	2.25	Mature	Good	Average	Very Asymmetric Canopy	Long (>40 years)	Moderate		Native	Civic	Evergreen	Remove
975	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.5	0.6	6	2.67	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
976	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.5	0.6	6	2.67	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
977	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.5	0.6	6	2.67	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
982	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	1.1	1.2	13.2	3.57	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
986	S	*Brachychiton acerifolius*	Illawarra Flame Tree	MALVACEAE	9	0.2	0.3	2.4	2	Mature	Excellent	Good		Long (>40 years)	High		Native	Medium	Deciduous	Retain
987	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	15	0.9	1	10.8	3.31	Mature	Excellent	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
6838	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	16	0.8	1.1	9.6	3.44	Mature	Excellent	Good		Long (>40 years)	High		Native	Large	Evergreen	Retain
6839	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.9	1.1	10.8	3.44	Mature	Excellent	Good		Long (>40 years)	High		Native	Large	Evergreen	Retain
6841	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	15	0.8	1	9.6	3.31	Mature	Excellent	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
6843	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	14	0.6	0.8	7.2	3.01	Mature	Excellent	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
6844	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	17	0.6	0.8	7.2	3.01	Mature	Excellent	Good		Long (>40 years)	High		Native	Large	Evergreen	Retain
6866	S	*Eucalyptus punctata*	Grey Gum	MYRTACEAE	12	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	High		Endemic	Medium	Evergreen	Remove
6869	S	Eucalyptus sideroxylon	Mugga Ironbark	MYRTACEAE	10	0.2	0.2	2.4	1.68	Semi-mature	Good	Average		Long (>40 years)	Moderate		Native	Medium	Evergreen	Retain
6870	S	Eucalyptus sideroxylon	Mugga Ironbark	MYRTACEAE	11	0.2	0.2	2.4	1.68	Semi-mature	Good	Average		Long (>40 years)	Moderate		Native	Medium	Evergreen	Retain
6871	S	Eucalyptus punctata	Grey Gum	MYRTACEAE	12	0.35	0.4	4.2	2.25	Mature	Fair	Average		Long (>40 years)	Moderate		Endemic	Medium	Evergreen	Remove
8511	S	*Cupaniopsis anacardioides*	Tuckeroo	SAPINDACEAE	7	0.25	0.3	3	2	Mature	Excellent	Good		Long (>40 years)	High	Great Tree	Native	Small	Evergreen	Retain
8512	S	Lophostemon confertus	Brush Box	MYRTACEAE	3	0.05	0.05	2	0.94	Young	Fair	Average		Replaceable (Small/Young)	Low	Young Tree <12 months	Native	Medium	Evergreen	Remove
8513	S	*Cupaniopsis anacardioides*	Tuckeroo	SAPINDACEAE	4	0.2	0.25	2.4	1.85	Mature	Good	Poor	Very Asymmetric Canopy	Long (>40 years)	Low		Native	Small	Evergreen	Remove
8514	S	*Cupaniopsis anacardioides*	Tuckeroo	SAPINDACEAE	4	0.1	0.15	2	1.49	Semi-mature	Good	Good		Long (>40 years)	Low		Native	Small	Evergreen	Remove

8515	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	5	0.15	0.2	2	1.68	Semi-mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8516	**S**	*Celtis australis*	**Southern Hackberry**	**ULMACAEAE**	12	0.5	0.7	6	2.85	Mature	Excellent	Good		Long (>40 years)	**Moderate**		Exotic	Medium	Deciduous	Remove
8518	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	6	0.15	0.2	2	1.68	Semi-mature	Good	Good		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8519	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	5	0.1	0.15	2	1.49	Semi-mature	Good	Good		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8520	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	4	0.1	0.15	2	1.49	Semi-mature	Fair	Good		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8522	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	6	0.2	0.3	2.4	2	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8525	**S**	*Celtis australis*	**Southern Hackberry**	**ULMACAEAE**	10	0.8	0.8	9.6	3.01	Mature	Good	Average		Long (>40 years)	**Moderate**		Exotic	Medium	Deciduous	**Retain**
8526	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	6	0.2	0.2	2.4	1.68	Semi-mature	Fair	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8527	**S**	**Melaleuca quinquenervia**	**Broad Leafed Paperbark**	**MYRTACEAE**	**12**	**0.7**	**0.8**	**8.4**	**3.01**	**Mature**	**Good**	**Good**		**Long (>40 years)**	**High**	**Valley pruned**	**Endemic**	**Medium**	**Evergreen**	**Retain**
8527	**S**	*Melaleuca quinquenervia*	**Broad Leafed Paperbark**	**MYRTACEAE**	12	0.7	0.8	8.4	3.01	Mature	Good	Good		Long (>40 years)	**High**	Valley pruned	Endemic	Medium	Evergreen	**Retain**
8528	**S**	**Cupaniopsis anacardioides**	**Tuckeroo**	**SAPINDACEAE**	**5**	**0.2**	**0.25**	**2.4**	**1.85**	**Mature**	**Good**	**Average**		**Long (>40 years)**	**Moderate**		**Native**	**Small**	**Evergreen**	**Retain**
8528	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	5	0.2	0.25	2.4	1.85	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8529	**S**	**Cupaniopsis anacardioides**	**Tuckeroo**	**SAPINDACEAE**	**5**	**0.2**	**0.25**	**2.4**	**1.85**	**Mature**	**Good**	**Average**	**Very Asymmetric Canopy,, Excessively Pruned**	**Long (>40 years)**	**Moderate**		**Native**	**Small**	**Evergreen**	**Retain**
8529	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	5	0.2	0.25	2.4	1.85	Mature	Good	Average	Very Asymmetric Canopy,, Excessively Pruned	Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8530	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	6	0.3	0.3	3.6	2	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8531	**S**	*Cupaniopsis anacardioides*	**Tuckeroo**	**SAPINDACEAE**	6	0.3	0.35	3.6	2.13	Mature	Good	Average		Long (>40 years)	**Moderate**		Native	Small	Evergreen	**Retain**
8538	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.9	1.1	10.8	3.44	Mature	Excellent	Average		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
8539	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
8540	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
8541	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.8	0.9	9.6	3.17	Mature	Good	Average	Major Inclusions	Long (>40 years)	**Moderate**		Native	Large	Evergreen	**Retain**
8542	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
8543	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.9	1.2	10.8	3.57	Mature	Excellent	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
8573	S	Lophostemon confertus	Brush Box	MYRTACEAE	4	0.05	0.05	2	0.94	Young	Fair	Average		Replaceable (Small/Young)	Low		Native	Medium	Evergreen	Remove
10635	**S**	*Lophostemon confertus*	**Brush Box**	**MYRTACEAE**	15	0.8	0.8	9.6	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Medium	Evergreen	**Retain**
10646	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.7	0.8	8.4	3.01	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
10647	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	15	0.75	0.9	9	3.17	Mature	Good	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
12493	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	24	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	**High**		Endemic	Large	Evergreen	Remove
12496	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	22	0.7	0.9	8.4	3.17	Mature	Excellent	Good		Long (>40 years)	**High**		Native	Large	Evergreen	Remove
12497	**S**	*Eucalyptus botryoides*	**Bangalay**	**MYRTACEAE**	14	0.4	0.6	4.8	2.67	Mature	Fair	Poor	Lean-Major	Long (>40 years)	**Moderate**		Endemic	Large	Evergreen	Remove
13285	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	16	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
13286	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	17	0.7	0.9	8.4	3.17	Mature	Excellent	Good		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
13287	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.8	0.9	9.6	3.17	Mature	Excellent	Good		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
13288	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	21	0.6	0.7	7.2	2.85	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**
13289	**S**	*Eucalyptus microcorys*	**Tallowood**	**MYRTACEAE**	20	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	**High**		Native	Large	Evergreen	**Retain**

15075	S	*Tristaniopsis laurina*	Water Gum	MYRTACEAE	5	0.2	0.2	2.4	1.68	Semi-mature	Good	Average		Long (>40 years)	Moderate		Native	Small	Evergreen	Retain
15078	S	*Eucalyptus botryoides*	Bangalay	MYRTACEAE	18	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	High		Endemic	Large	Evergreen	Retain
15091	S	*Melaleuca quinquenervia*	Broad Leafed Paperbark	MYRTACEAE	12	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	Moderate		Endemic	Medium	Evergreen	Retain
15093	S	*Tristaniopsis laurina*	Water Gum	MYRTACEAE	4	0.2	0.25	2.4	1.85	Semi-mature	Good	Good		Long (>40 years)	Moderate		Native	Small	Evergreen	Retain
15097	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	19	1	1.1	12	3.44	Mature	Excellent	Good		Long (>40 years)	High		Native	Large	Evergreen	Retain
16528	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	16	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	High	Tree codominant stems	Native	Large	Evergreen	Remove
16529	S	*Ficus microcarpa var. hillii*	Hills Weeping Fig	MORACEAE	18	0.8	1	9.6	3.31	Mature	Excellent	Average		Long (>40 years)	High		Native	Civic	Evergreen	Retain
16530	S	*Eucalyptus punctata*	Grey Gum	MYRTACEAE	20	0.6	0.7	7.2	2.85	Mature	Fair	Average		Long (>40 years)	Moderate	Tree growing close to fig	Endemic	Medium	Evergreen	Retain
29814	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
29816	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
29817	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.8	1	9.6	3.31	Mature	Excellent	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
29819	S	*Melaleuca quinquenervia*	Broad Leafed Paperbark	MYRTACEAE	19	1.2	1.3	14.4	3.69	Mature	Good	Average		Long (>40 years)	Moderate		Endemic	Medium	Evergreen	Retain
29820	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	17	0.7	0.9	8.4	3.17	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
29837	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	20	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
31543	S	*Cupaniopsis anacardioides*	Tuckeroo	SAPINDACEAE	5	0.25	0.3	3	2	Semi-mature	Good	Good		Long (>40 years)	Moderate		Native	Small	Evergreen	Retain
32842	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	14	0.8	1	9.6	3.31	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
32865	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	14	0.7	0.8	8.4	3.01	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Retain
32866	S	*Eucalyptus saligna*	Sydney Blue Gum	MYRTACEAE	16	0.9	0.9	10.8	3.17	Mature	Good	Average		Long (>40 years)	High		Native	Civic	Evergreen	Retain
32868	S	*Eucalyptus saligna*	Sydney Blue Gum	MYRTACEAE	16	0.35	0.6	4.2	2.67	Mature	Good	Good		Long (>40 years)	High		Native	Civic	Evergreen	Retain
32872	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	14	0.6	0.7	7.2	2.85	Mature	Good	Poor		Long (>40 years)	Moderate		Native	Large	Evergreen	Retain
32873	S	*Eucalyptus microcorys*	Tallowood	MYRTACEAE	14	0.8	0.9	9.6	3.17	Mature	Good	Average		Long (>40 years)	High		Native	Large	Evergreen	Remove
32882	**S**	***Corymbia maculata***	**Spotted Gum**	**MYRTACEAE**	**10**	**0.2**	**0.2**	**2.4**	**1.68**	**Semi-mature**	**Good**	**Average**		**Long (>40 years)**	**Moderate**		**Native**	**Large**	**Evergreen**	**Remove**

11 ATTACHMENT D – CANOPY TREE RETENTION POTENTIAL (ASPECT ENVIRONMENTAL, 2021; MAP SOURCE: HASSELL, 2021)

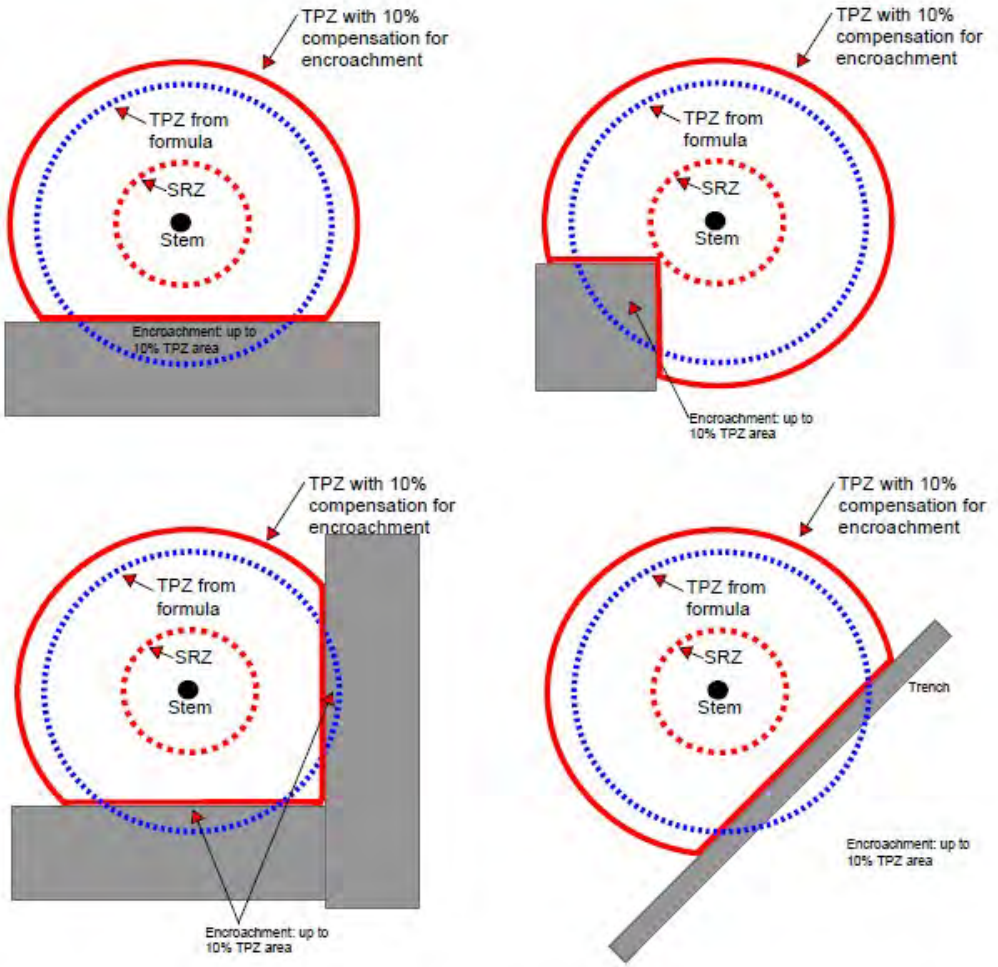
Figure 10: Significant trees



12 ATTACHMENT E – EXAMPLES OF TPZ ENCROACHMENT (HUGH THE ARBORIST, 2021)

Examples of TPZ Encroachment

Encroachment into the Tree Protection Zone is sometimes unavoidable. The following diagram shows examples of acceptable levels of encroachment and how they may be compensated for by providing additional space contiguous to the TPZ area.



Note: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.