ArborSite

Simple Interactive Tree Management

Parramatta City Council
Newington Street Tree Mapping Project
Newington NSW

TREE ASSESSMENT REPORT SUMMARY - 2017

A10766

ArborSite - Tree Assessment Report summary for Newington Street Trees

Date Assessment Commenced: June 20th, 2017
Product delivered: ArborSite Annualised Report
Location: Newington, NSW 2127

Total number of trees assessed was 2562 (please note that this may not be the total number of trees on site).

The assessment rated the 2562 surveyed trees into the following ArborSite risk categories:

- **0 Critical risk trees**
- **0 Urgent risk trees**
- **50 High risk trees** – 24 removals.
- **765 Medium risk trees** – 108 removals.
- **1035 Low risk trees** – 23 removals.
- **606 Very Low risk trees** – 1 removal.
- **106 Negligible risk trees** – 0 removals.

These 2562 trees fall into the following Council Priority rating categories (see Priority Matrix on page 5):

- **0 Priority 1 trees**
- **23 Priority 2 trees** – 19 removals.
- **172 Priority 3 trees** – 131 removals.
- **634 Priority 4 trees** – 6 removals.
- **797 Priority 5 trees** – No removals.
- **936 Priority 6 trees** – No removals.

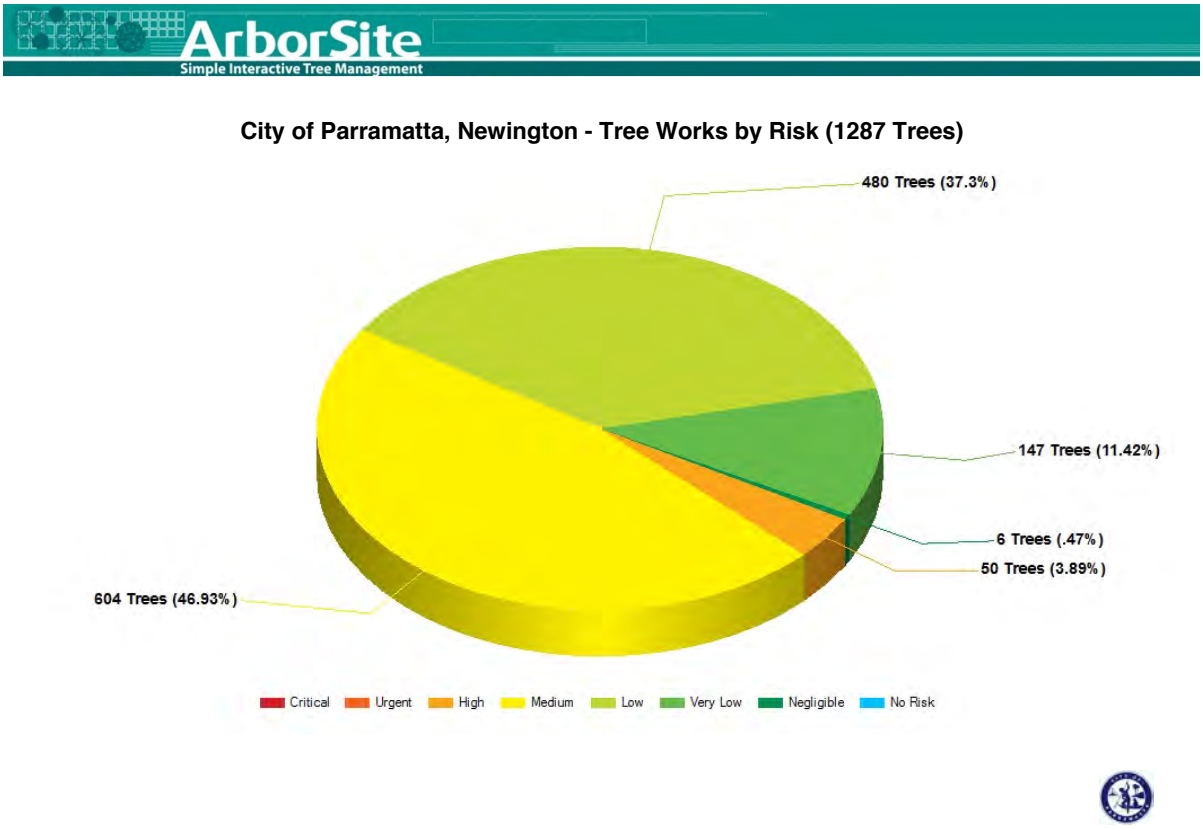
There were one hundred and fifty-six (156) trees recommended for removal in total. The removal of these trees should be undertaken based on the higher risk rating to lowest risk rating as budget allows. For reasoning behind the recommendation for removal of the specified trees, you can locate the trees within your ArborSite report by going to the **Risk Works Budget & Scheduling** section and looking in the "Work Required" column and looking for the word "Removal" as the work specification.

Please note the site has one (1) high risk tree (#2232) with significant wounding at 2m. The wound and surrounding tissue sounds "drummy" with evidence of early decay forming in the wound and now requires Picus testing to ascertain the decay to sound wood ratio. All findings should be reported to the site arborist/manager for review.

One (1) high risk tree (#1249) should have a climber inspect it for an included union and if found, the tree should be removed and replaced (see report for full details).

Site or Whole Treescape Comments:

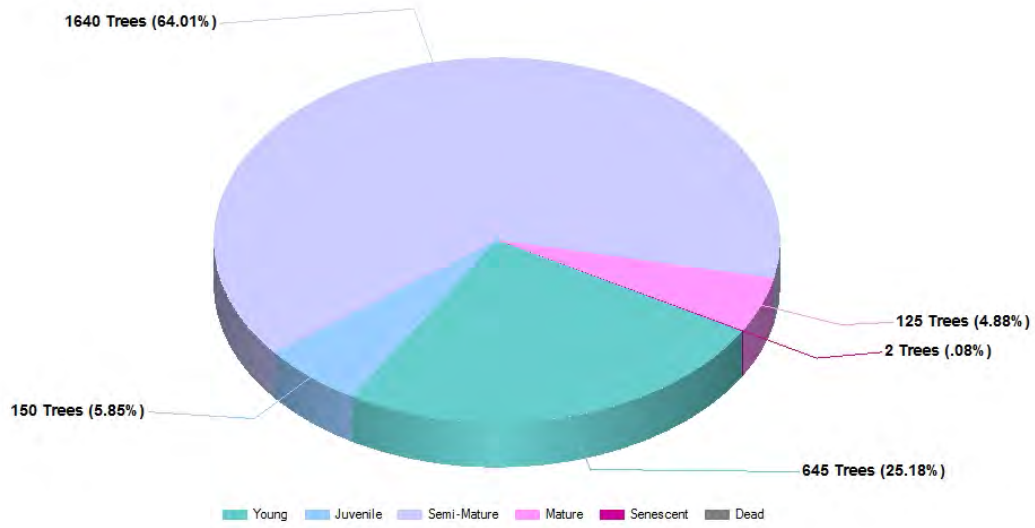
Overall the trees assessed within the Newington area were found to be of good health and structure. The overall risk rating for the site was also considered to be low when compared with relative sections of urban forest that are assessed for the first time.



The species profile of the street trees is relatively narrow with *Corymbia citriodora* (Lemon Scented Gum) and *Corymbia maculata* (Spotted Gum) comprising a significant portion of the trees assessed. *Angophora costata* (Smooth Barked Apple), *Eucalyptus punctata* (Grey Gum), *Corymbia eximia* (Yellow Bloodwood), *Eucalyptus saligna* (Sydney Blue Gum), *Eucalyptus scoparia* (Wallangarra White Gum), *Eucalyptus camaldulensis* (River Red Gum), *Acacia* spp. (Wattle) and *Eucalyptus paniculata* (Grey Iron Bark) also feature in the streetscape. Not only is the overall species profile relatively narrow, the overall current tree age and Tree Life Expectancy (TLE) is also comparatively narrow.

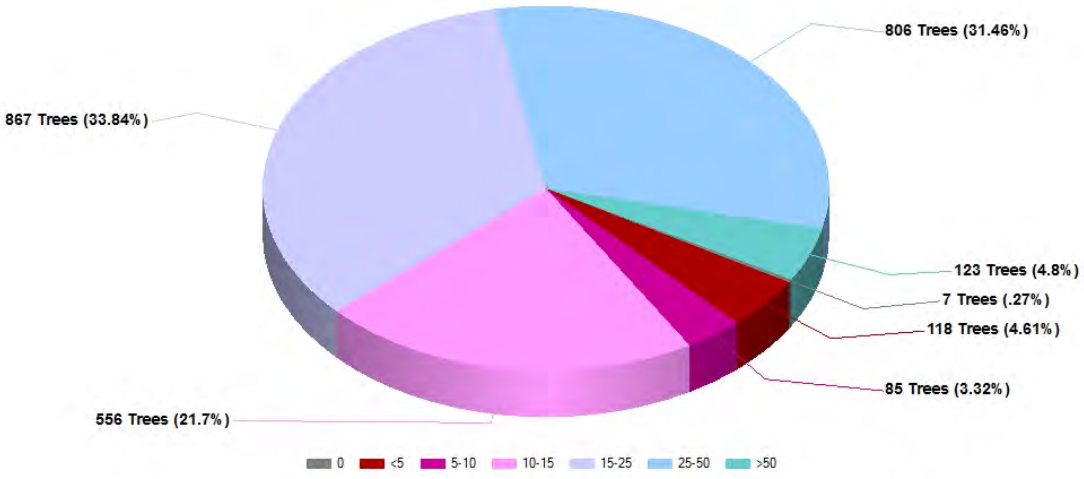
ArborSite
Simple Interactive Tree Management

City of Parramatta, Newington - Tree Age (2562 Trees)



ArborSite
Simple Interactive Tree Management

City of Parramatta, Newington - Tree Life Expectancy (2562 Trees)**



**Not related to hazard and risk assessment

It is important to note the difference between Species Profile Life Expectancy (SPLE) vs TLE. SPLE is based on a tree growing in its natural environment, where species are capable of living for well over 100 years and in many cases into the multiple hundreds of years vs TLE where the assessing Arborist makes an educated estimation of the expected life span that includes the tree's death but also takes into account soil profile and condition, and proximity to infrastructure and likely damage that will occur if said infrastructure is damaged and requires maintenance or replacement, which often results in damage to the tree's structure and therefore reduces the TLE. In an attempt to quantify all of these parameters, the agreed Priority Matrix was adopted and applied to all trees within the site:

DAMAGE IMPACT The priority of removal and replacement based on severity of damage.	PRIORITY LEVEL	ACTION REQUIRED	EXAMPLE DESCRIPTION
	Priority1	Action as soon as Council's timeline permits.	This tree presents a risk equal to Critical or Urgent under the ArborSafe risk methodology. Tree risk is assessed for arboricultural hazard only.
	Priority2	Action as soon as practicably possible.	Significant damage to infrastructure has occurred and requires repair and where repair will likely cause significant structural damage to the tree requiring removal. Or where unknown and significant damage is suspected to have occurred to the tree's Structural Root Zone. Or where tree removal is a priority.
	Priority3	Remedial tree works required at a time frame to be scheduled by client.	A dead tree located on a street verge. Tree presents poor structure and or poor health (TLE of < 5 years) whereby remedial work measures would not prolong the tree's life. Tree is not suitably positioned to sustain future growth i.e. limited available soil volume for species. Damage to infrastructure is considered likely within 5 years.
	Priority4	Removal works required at a time frame to be scheduled by client.	A dead tree located in an area other than a road verge. Tree may not be suitably positioned to sustain future growth i.e. limited available soil volume for species. Removal and replacement may be required in the next 0-10 years. Damage to infrastructure is considered possible within 5-10 years.
	Priority5	Remedial tree works required at a time frame to be scheduled by client.	Tree is suitably positioned to sustain future growth and could live for 10-20 years with routine maintenance pruning and or formative pruning and or clearance pruning. Damage to infrastructure is considered unlikely within 5-10 years.
	Priority6	Removal not recommended, no remedial actions have been recommended.	Tree is suitably positioned to sustain future growth and could live for more than 20 years with minimal amount of remedial maintenance work. Damage to infrastructure is considered unlikely within 5-10 years.

Please note. The above Matrix was developed and specified for use by City of Parramatta and is not a product of ArborSafe or the ArborSite system.

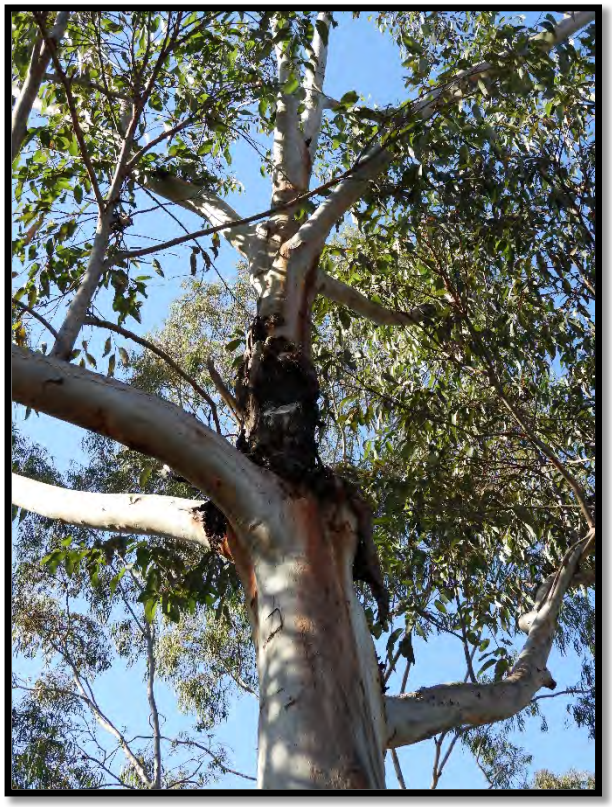
Directly comparable to the overall risk rating of the site is the data for trees expected to require removal in the short-term due to damage to infrastructure with the bulk of trees assessed in the Priority 4, 5 or 6. Just 7.5% (193 trees) fall into the Priority 2 or 3 categories.

- Priority 1 – 0% - 0 trees
- Priority 2 – 0.9% - 23 trees
- Priority 3 – 6.7% - 172 trees
- Priority 4 – 24.7% - 634 trees
- Priority 5 – 31.1% - 797 trees
- Priority 6 – 36.6% - 936 trees

Species issues:

The *Eucalyptus punctata* (Grey Gums) in the southern portion of the site were notably of poor genetic structure when compared to the remaining species which had few genetic defects. *Eucalyptus saligna* (Sydney Blue Gum) comprised a significant volume of the trees within the median strips; while this species is endemic to the Sydney region, extensive borer damage was observed throughout the population. While it is common for native trees to be attacked by native insects, the species is doing very poorly when compared to the remaining species. In many cases the borer damage is so severe that the trees' ULE has been significantly reduced and many recommended for removal.

An example of *Eucalyptus saligna* with significant basal borer damage that the tree is unable to compensate for. This tree is also an example of a Priority 3.



An example of *Eucalyptus saligna* with significant borer damage in the upper canopy that has resulted in a tree of poor structure that the tree is unable to compensate for. This tree is also an example of a Priority 3.

Soils and planting:

The soil profile of the site was observed to be both highly disturbed and varied throughout the site with shale, clay and sand all mixed together and visible at top soil level, and significant compaction was also observed throughout the site. Given the area's accelerated development, the disturbed / inverted soil profile was not unexpected, however the widespread compaction problems were more of a long-term concern. Despite heavy and disturbed soils, the majority of the trees assessed were doing remarkably well.

The planting height of the majority of the trees was found to be very good with trunk collars level with the ground with few were observed to be planted either too deep or shallow. Noticeably where trees had been planted too shallow, anecdotally this appears to have caused more issues with surrounding infrastructure than those planted at correct height.

It was also anecdotally observed that there were more issues with surrounding infrastructure with *Corymbia citriodora* (Lemon Scented Gum) than other species.

An example of tree planted at appropriate depth. This is also an example of a Priority 5 tree.

An example of tree planted to shallow. This also an example of a Priority 4 tree as the footpath has already been replaced.

Damage to infrastructure:

Damage to infrastructure was one data set requested to be obtained and was done so with the attached matrix. Most of the damage to infrastructure that was observed was to footpaths and, to a lesser extent, to the kerb and gutter, a consideration that should be taken into account. What was observed in a number of instances was damage that had occurred to the trees' root systems to allow for replacement of footpaths. In several cases large diameter (>100mm) roots were observed to be torn off at the root crown. This activity can lead to significant structural instability and potentially whole tree failure. Consideration to both change this practice and include preventative measures, such as Tripstop, should be considered. Products such as Tripstop can result in a reduction of hazard from tree failure but also reduce trip hazards and increase life expectancy of the footpath, decreasing associated maintenance costs. If products such as Tripstop are not part of current practice, it is highly recommended that this be investigated. http://www.tripstop.net/

An example of significant foot path displacement. This is also an example of a Priority 2 Tree as repairs to the footpath will likely cause significant damage to the tree's structural root system.

An example of minor footpath displacement. This is also an example of a Priority 4 Tree.

An example of both tree being planted too shallow and newly installed footpath.
The construction of the footpath appears to only have regular expansion joints and no Tripstop.

An example of damage that has occurred to the structural root system of the tree during recent footpath reinstatement. This tree is listed as a High-Risk tree due to the unknown damage that has occurred to the structural root system. This is also a Priority 2 Tree.

What wasn't observed:

During the assessment the *lack* of damage to street trees from lawn movers and brush cutters was noted to both trunk and root scalping. In fact, it seemed more prevalent in parks than in the streets. It is unusual to see a population of trees with such a low amount of damage indicating that while the soil is very compacted, it is also reasonable to assume that the oxygen saturation and depth mush be good, otherwise more surface roots would have been observed. For this reason, it is recommended that if Council has not undertaken airspade excavation of a tree's root system in Newington, then it would be beneficial do so. The results of such an excavation may lead not only to a better understanding of how the trees' root systems are performing, but also how much damage the structural root system could tolerate before becoming a hazard in this specific soil profile.