



**GEORGES
RIVER
COUNCIL**

TREE MANAGEMENT POLICY

April 2019

POLICY ADMINISTRATION

Dates	Policy approved – 23/04/2019 This policy is effective upon its approval. Policy is due for review after October 2019
Approved by	Council Meeting – 23/04/2019 (Version 2) Council Resolution CCL019-19
Exhibition Period	Only proposed amendments to Council's Schedule of Fees and Charges to be placed on public exhibition.
Policy Owner	Director, Assets and Infrastructure
Related Documents	<ul style="list-style-type: none"> • Kogarah DCP 2013 – B2 Tree Management and Green Web • Hurstville DCP no.1 (Amendment 5) Appendix 1 Preservation of Trees and Vegetation • Kogarah Street Tree Management Strategy and Masterplan 2009 • Hurstville Street Tree Management Study 2015 • Georges River Council Community Strategic Plan • Georges River Council Vegetation Mapping Report 2018 • Sydney Green Grid – South District • SSROC Southern Sydney Connected Corridors for Biodiversity Habitats 2018/19
Appendices	Appendix 1 – Tree Planting Appendix 2 – Guide on Information to Support Tree Permits and Development Applications
References & Legislation	<ul style="list-style-type: none"> • Biodiversity Conservation Act 2016 • Environmental Planning and Assessment Act 1979 • State Environmental Planning Policy (Exempt and Complying Development 2008 • State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 • NSW Rural Fires Amendment (Vegetation Clearing) Act 2014 introducing the 10/50 rule. • Hurstville Local Environment Plan 2012 • Kogarah Local Environment Plan 2012 • Kogarah Development Control Plan 2012 • Hurstville Development Control Plan 2012 • Roads Act 1993 • Work Health and Safety Act 2011 • Electricity Supply Act 1995 • Australian Standard AS4373 – Pruning of Amenity Trees • Australian Standard AS 4970 – Protection of Trees on Development Sites

	<ul style="list-style-type: none"> • Georges River Council Schedule Fees and charges
Document Identifier	<p>Policy #: Pol-058.02 Record #: D19/40460</p>
Breaches of Policy	<p>Breaches of any policy will be dealt with and responded to in accordance with adopted codes and/or relevant legislation.</p>
Record Keeping	<p>All documents and information obtained in relation to the implementation of this policy will be kept in accordance with the NSW State Records Act 1998, Georges River Council's Corporate Records Policy and adopted internal procedures.</p>

PURPOSE

The purpose of this policy is to provide a direction and a consistent approach to the management of trees on both public and private lands within the Georges River local Government Area.

The objectives of this Policy are:

- To recognise the importance of the tree canopy throughout the City.
- To recognise the importance of street trees, bushland and indigenous trees and the ecological and economic role they play in the City.
- To increase and enhance the extent of urban tree canopy throughout the City to the achievable 40% minimum by 2038 set by the Greater Sydney Regional Plan through planting of appropriately selected trees in streets, public spaces and bushland areas.
- To provide workable assessment criteria for the management of trees on private and public land.

Vision

The natural environment is a much loved aspect of the area. It was clear from consultation for the Community Strategic Plan that people want green, open spaces to be prioritised over development and they want Council to be an environmental leader.

Council's community strategic plan identifies "a protected environment and green open spaces" as one of the six pillars to shape our planning processes and underpin our work.

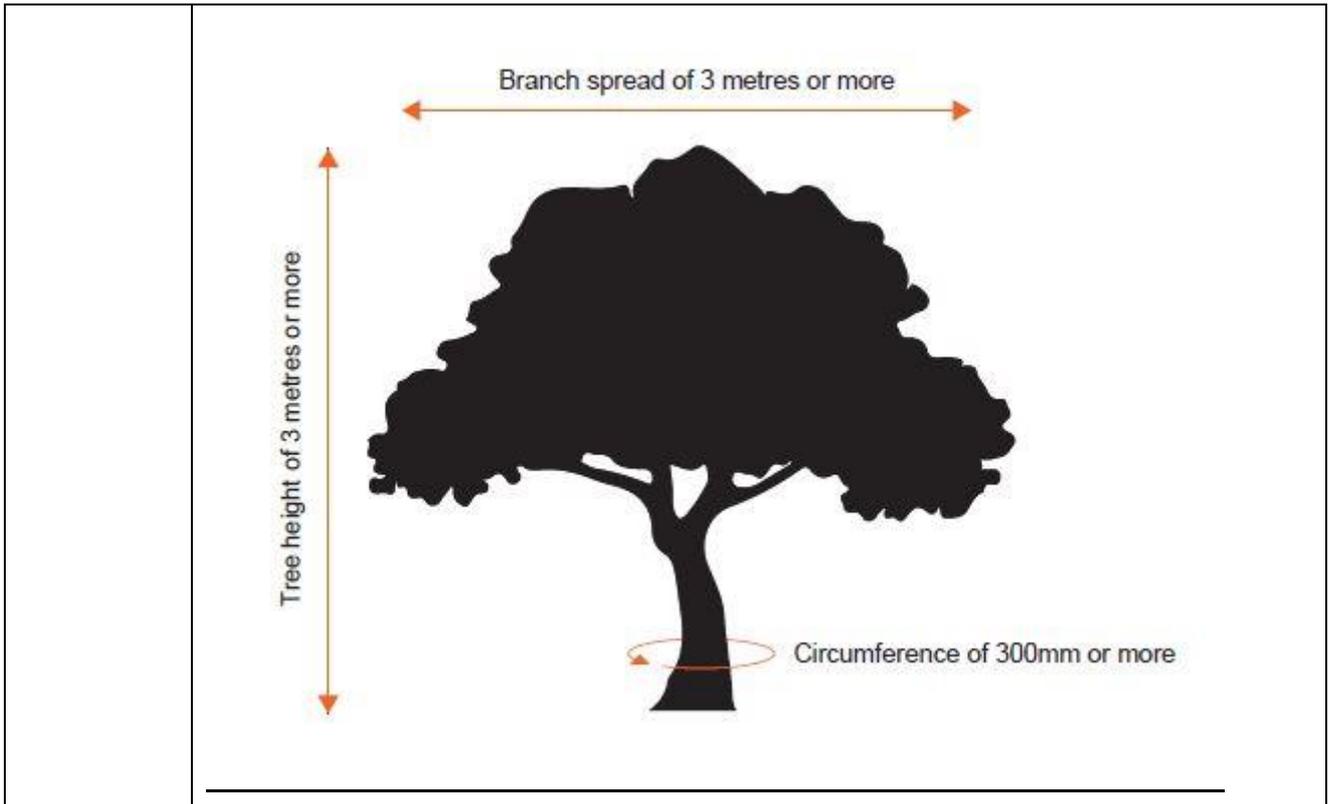
Our vision is for a City where trees and bushland are valued for their ecological, aesthetic, social and economic contribution they make by creating a healthy, attractive living environment and providing a sense of place for our community.

SCOPE

The policy applies to the whole of Georges River local government area – both private and public land.

DEFINITION OF TERMS

Term	Meaning
Tree	<p>A tree is defined as having a:</p> <ul style="list-style-type: none">• Height of 3 metres or more, or• Circumference of 300mm (or greater) when measured at 450mm above the ground; or• Branch spread of 3 metres or more. <p>See diagram below for visual reference of what is defined as a tree.</p>



POLICY STATEMENT

1. Introduction

Trees provide a range of benefits in the urban environment and these are grouped under the broad headings of:

- Environmental and Ecological
- Social and Health
- Aesthetic and Architectural
- Economic
- Urban Canopy Enhancement.

1.1. Environmental and Ecological Benefits

The environmental and ecological benefits of trees include:

- Trees improve the quality of air by trapping airborne particles on the surface of their leaves and filtering large quantities of gaseous pollutants such as carbon monoxide, sulphur dioxide and nitrogen oxides from the air. They counteract the global 'greenhouse effect' by absorbing carbon dioxide. Through the process of photosynthesis they convert carbon dioxide into oxygen.
- Trees also improve the quality of water. Trees and vegetation act as a natural filter by intercepting fertilizers and other pollutants flowing into watercourses through

ground and surface runoff. Soil erosion and siltation of urban watercourses is reduced by the placement of trees.

- Trees can significantly reduce stormwater runoff. Their roots absorb the water while their leaves slow the impact of the rainfall thereby reducing the load on stormwater systems. Trees help reduce the negative effects of noise pollution. Planting can be used to diminish the psychological effects of noise pollution by obscuring the source from view.
- Trees reduce wind and protect against ultra-violet rays. The strategic placement of trees can moderate wind speed at ground level.
- Trees reduce temperature and heating costs. Trees help to diffuse the 'urban heat island' effect by providing shade and evapo-transpiration.
- Trees, shrubs and ground covers provide ecological diversity and are an important habitat for a variety of organisms from insects to reptiles, amphibians, mammals and birds. The air, water and nutrient exchange undertaken by trees are fundamental to human existence and the continuity of the food web which supports all life on earth.
- Larger native trees develop hollows, often where limbs have separated, which are used as necessary habitat for threatened and vulnerable species in Georges River such as the Little Lorikeet or Powerful Owl.

1.2. Social and Health Benefits

Many studies have shown that a green environment has wide-ranging benefits both for communities and individuals. An attractive and treed environment is likely to contribute to a safer and stronger community with reduced crime, violence and aggression. Research also suggests that a green environment may have a positive effect on individual health and learning by reducing stress, assisting concentration and reducing fatigue

Trees help moderate the stress of urban life. In the harsh environment of urban centres, the urban forest allows us to experience the natural world in a tangible form that seems to moderate the stress of everyday urban life.

Trees provide privacy and a sense of peace and have a restorative effect that can improve physical well-being.

Trees promote community identity. Trees offer beauty and create a sense of place in the community. A healthy urban forest can be a great source of civic pride. Tree planting programs allow residents to participate in creating a City they can be proud of. Trees create more pleasant walking environments, bringing about increased walking and socialising within the community. Research has also found that the presence of trees is related to residents being actively involved in the caretaking and surveillance of homes, businesses and other public spaces.

1.3. Aesthetic and Architectural Benefits

Trees have a wide range of intrinsic visual qualities including textures, colours, movement, fragrances, patterns and sounds. Trees can form walls and canopies of varying heights and

densities which can soften, screen, enhance and provide a natural, living contrast to the built environment.

Trees have the ability to reinforce the local identity and character of a place. In addition, the natural and cultural heritage values of certain trees represent an important depth of meaning and history of the landscape. Due to their longevity, trees provide recognisable landmarks that link generations.

1.4. Economic

A properly maintained urban forest is an investment that appreciates in value. While there are various opinions as to the economic value of a tree, all estimates support the basic contention that a tree's value far exceeds the costs of planting and maintenance.

Direct savings can be achieved through lower energy costs associated with summer shade.

Indirect economic benefits accrue from health and productivity benefits and reduced expenditure on stormwater management. A well maintained urban forest is a significant factor in promoting community prosperity and in attracting tourism and investment.

Trees can enhance property values – with trees enhancing the marketability of a home.

1.5. Urban Canopy Enhancement

Georges River Council has an estimated canopy cover of 23.5% not including mangroves, or 35-38% including mangroves (Vegetation Mapping Report 2018).

A network of street trees and reserves contribute to tree cover throughout the LGA. Council is currently compiling an Urban Canopy Enhancement Program, which is aimed at enhancing the tree canopy cover to achieve the maximum ecological, aesthetic, economic and social benefits of trees. The Program is also being developed to ensure the City meets the target of 40% urban canopy by 2038 as set by the Greater Sydney Regional Plan - A Metropolis of Three Cities (2017) objective of Expand urban tree canopy in the public realm (Objective 30).

The planting program will enhance the city's urban canopy. The plantings are to be guided by the findings of the Vegetation Mapping Report (2018) and will include the following areas in the city:

- Town/neighbourhood centres
- Streets
- Parks and reserves
- Foreshore areas

2. Assessment Framework

Georges River Council has an obligation to preserve trees and vegetation under the provisions of the Environmental Planning and Assessment Act, the local environmental planning instruments and strategy documents of the former Kogarah and Hurstville Council.

The Local Environmental Plan (LEP) is the principal environmental planning instrument used by councils to regulate land use and influence planning and development decisions within the Local Government Area (LGA). The LEPs of the former Councils contain clauses for heritage conservation, as well as a number of other environmental requirements.

The Development Control Plan (DCP) supports the controls outlined in the LEP with more specific planning and design guidelines.

The relevant planning documents relating to tree management are:

- State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
- Hurstville LEP 2012
- Kogarah LEP 2012
- Kogarah DCP 2013 – B2 Tree Management and Green Web
- Hurstville DCP no.1 (Amendment 5) Appendix 1 Preservation of Trees and Vegetation.

Note - State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 repealed clauses 5.9 and 5.9AA of the Standard Instrument LEP, which relate to tree preservation. These clauses were replaced with the SEPP's requirements for clearing vegetation in urban and other non-rural areas.

This Policy is to be read in conjunction with the provisions of the City's LEP's, DCP's, Kogarah Street Tree Management Strategy and Masterplan 2009 and Hurstville Street Tree Management Study 2015.

In the event of an inconsistency between this Policy and another Council Policy, strategy or study, this Policy will apply.

This part of the Policy contains the following:

- Works to trees that require approval
- Works to trees that are exempt
- Works to trees that may not be approved
- Tree Assessment
- Trees and Views
- Tree Vandalism, Penalties and Compliance.

2.1. Tree Works that Require Approval

Works to any part of a tree, above or below ground will require approval, except for those works listed in Section 2.4 'Exempt Works'.

Approval through the issuing of development consent or a tree permit may be granted for the following:

- Removal of undesirable or hazardous trees where remedial pruning/treatment will not eliminate the hazard.
- Pruning of the canopy.
- Selective pruning to remove branches causing conflict through encroachment on own or neighbouring buildings.
- Root pruning.
- Inserting root barriers.
- Removal of tree(s) in conflict with built structures, where all engineering alternatives have been considered.
- Removal of tree(s) for construction or extension of buildings where there is no alternative to maintain the tree(s).
- Activities identified in State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.
- Pruning and removal of trees located on a heritage listed property, on a site in a Heritage Conservation area or listed on a significant tree register.
- Works to trees classified as being part of a vulnerable threatened or endangered ecological community or has the potential to provide habitat for native fauna under the Biodiversity Conservation Act 2016 and Local Land Services Act 2013.

A development application is required to be lodged when seeking approval for works to trees that:

- Are located on a heritage listed property or significant tree register
- Are classified as being part of a vulnerable threatened or endangered ecological community or has the potential to provide habitat for native fauna under the Biodiversity Conservation Act 2016
- Are associated with the development / building activities excluding exempt development in which case a tree permit application is required.

2.2. Complying Development and Trees

If development is being undertaken as complying development under State Environmental Planning Policy (Exempt and Complying Development) 2008 approval to undertake works to a tree beyond the development standards specified is required to be obtained through a tree permit. Work to a public or street tree will also require approval from Council as the Codes SEPP does not apply to these trees. Information on requesting street tree works and the approval framework is found in Section 3: Street Trees.

2.3. Native Vegetation Clearing Under the Biodiversity Offset Scheme

Under the *Biodiversity Conservation Act 2016* and *Local Land Services Act 2013* allowance for tree works that do not require development consent or assessment are outlined under Part 5 of the *Environmental Planning and Assessment Act 1979*.

2.4. Exempt Works

Works to trees that do not require approval can occur for the following:

- Trees that have been declared undesirable species may be removed or pruned without development consent or a permit. The undesirable species are in Table 2.
- Any commercial or domestic tree grown for the purpose of fruit or fodder production except for native species such as Macadamia (*Macadamia integrifolia*), Lilly Pilly (*Acmena* spp, *Syzygium* spp.), Blueberry Ash (*Elaeocarpus* spp).
- Trees recognised as Appendix 1 and 2 Priority weeds for the Greater Sydney Local Land Services Region under the Biosecurity Act 2015.
- Pruning of branches from electricity wires as required by the Electricity Supply Act 1995 when undertaken by an authorised person.
- The removal/trimming of trees and vegetation is in accordance with the Roads Act 1993 when undertaken by an authorised person.
- Tree work by Council, the State Emergency Services, the Rural Fire Service of NSW, or a public authority in response to an emergency, when undertaken by an authorised person.
- Works carried out by state or federal government departments or authorities under current legislative requirements.
- Works carried out by Council that relate to:
 - Pruning/removal of dead wood and crown lift for vehicle and pedestrian access;
 - Pruning to remove storm damaged, dead or crossing branches; and
 - Removal of trees if causing property damage.
- Removal of trees to allow room for public infrastructure projects.
- Work undertaken by persons authorised by Council where it can be demonstrated that the tree is dying, dead or has become dangerous to properties or persons and is undertaken in accordance with relevant Australian Standards.
- Dead tree - evidence is provided that the tree does not provide habitat for species listed in the Biodiversity Conservation Act 2016.
- Trees subject to an order under the Local Government Act 1993, Land and Environment Court Act 1979, Environmental Planning and Assessment Act 1979 and Trees (Disputes between Neighbours) Act 2006.

Table 2: Undesirable Species

Botanical Name	Common Name
Bambusa spp	Bamboo
Syagrus romanzoffianum	Cocos Palm
Erythrina x sykesii	Coral Tree
Ficus elastica	Rubber Tree

Botanical Name	Common Name
Grevillea robusta	Silky Oak
Nerium oleander	Oleander
Populus nigra 'Italica'	Lombardy Poplar
Salix babylonica	Common Willow
Schefflera actinophylla	Umbrella Tree
Ligustrum spp	Privet
Ailanthus altissima	Tree of Heaven
Olea Africana	Wild Olive/African Olive
Cupressus x leylandii	Leighton Green
Gleditsia trinophylla	Honey Locust
Morus nigra	Black Mulberry
Toxicodendron spp	Rhus tree
Acacia baileyana	Cootamundra Wattle

Note - Persons that carry out works to trees (that are exempt) are encouraged to keep suitable evidence to prove the condition of the tree and the works undertaken in the event of a subsequent inspection by Council.

2.5. List of works to trees that Council may not grant approval

Council may not grant approval to tree works such as removing or pruning of trees to:

- Improve a view or vista.
- Reduce blockage to pipes, sewer or drainage lines – where the roots of trees that have entered the drainage or sewer systems where the system is found to be in poor condition or disrepair.
- Reduce litter occurring through the shedding of leaves, fruit, bark and small branches as part of a normal living function of the tree.
- Reduce litter from fauna naturally inhabiting the tree.
- Reduce causing or likely to cause minor damage to driveways and paths.
- When the request for the works are not substantiated or considered appropriate.
- Solar access.

2.6. Tree Assessment

Assessment of proposed works to trees is based on:

- a) **Visual Tree Assessment (VTA) of each tree.** This is a world-wide arboricultural industry standard of assessing a tree(s) from ground level looking for any external signs of decay, physical damage or growth related structural defects. The assessment may apply a risk management approach to Hazard Assessment such as Quantified Tree Risk Assessment, (QTRA) and Tree Risk Assessment Qualification, (TRAQ).

This method ascertains whether there are grounds for removal or if there is need for a more detailed inspection of any part of the tree. It does not include specialised assessments such as tree decay, aerial inspection, pathology diagnosis of any pests or diseases or risk assessment.

- b) **Urban Value Assessment of the tree(s)** to the landscape character of the area i.e. is the tree visually prominent and does it contribute to the character and local identity of the area. Other factors include the tree's age, size, or uniqueness.

2.7. Issues for Consideration in the Assessment of Tree Works

The assessment of an application for tree works will involve consideration of the following:

- Visual Tree Assessment - assessment based on the current health, condition and structure of the tree.
- Urban Value Assessment - assessment based on the trees contribution to landscape character.
- The size, health and age of the tree and whether the tree shows poor form and shape/vigor typical of the species and whether this poor form is a result of inappropriate pruning by an external authority.
- The environmental, heritage, cultural and amenity value of the tree and any contribution the tree makes to the natural landscape or scenic value of the land or the locality.
- The tree's intrinsic value (physical and cultural) to public amenity – in particular the physical characteristics of the tree, its positioning as part of a broader ecological community and prominence due to height, branch spread, trunk diameter and age.
- The effect on the health of the tree from the proposed works such as branch or root pruning.
- Any contribution the tree makes to the local ecosystem and biodiversity, such as providing hollows for habitat.
- Where hollows are present in expired native trees, the possibility of retaining the brunt of the tree's form is explored in suitable areas such as public reserves.
- Whether the tree is part of a threatened, vulnerable or ecologically protected community or part of a wildlife corridor identified in Council's Vegetation Mapping Report 2018.
- Its location within 3m of a residence, main building or other significant structure but not a garden shed workshop or other non-habitable spaces.
- The occurrence (or lack of) other vegetation nearby and whether appropriate replacement species can be planted.
- Whether the tree is the identified cause of structural damage to a building, ancillary structure, water main or sewer and if all alternative options of remedying the damage have been considered.
- Damage to the tree following a significant storm event and whether this damage compromises the integrity and structure of the tree.

- Whether a tree should be replaced with a more suitable species given its location of proximity to services such as overhead power lines.
- Any contribution the tree makes to privacy, landscaping, garden design, heritage values or protection from the sun, wind, noise, or the amenity of the land.
- It's role within a vegetation system (such as remnant, riparian systems) and natural wildlife habitats.
- Have alternate management strategies being considered such as redesign of a development in order to protect the tree.

Often, applications for tree removal may be based on a history of problems or hazards not evident at the time of inspection e.g. damage to buildings; blocked sewers; previously fallen branches; etc. It is the applicant's responsibility to provide sufficient information and background to support the application. This information may be in the form of a report from a consulting arborist, licensed plumber, pest controller or structural engineer depending on the nature of the problem.

If there is insufficient information, the application may be refused or deferred until further evidence is supplied. Further details on the information required to be submitted with an application to Council is outlined in Appendix 2.

a) Trees and Views

Council may not prune or approve the pruning of a tree to create a new view. View pruning will only be considered where it is requested to retain a previously established view and there is a history of the identified tree(s) being pruned to restore the pre-existing view. Trees can often improve and frame views and are usually an aesthetic element in the view itself.

Where a private view is likely to be affected by the planting or replacing of trees in a street or park, Council will continue its policy that no individual exclusively owns a view, but rather that the amenity provided by trees outweighs the amenity of views.

New planting in public open spaces will consider the impact on views and species will be selected and placed to frame and complement views.

b) Tree Vandalism and Penalties

Vandalism of public and private trees not only affects adjacent neighbours but also whole streetscapes. The wider community also suffers through the gradual attrition of mature trees from the urban landscape.

Council presently responds to incidents of tree damage by investigating all reports and gathering information and undertaking the required actions to rectify the situation. Legal action including prosecutions will be undertaken in accordance with the relevant legislation. Under this Policy, where a street tree is recognised to have been vandalised, Council will

circulate nearby letter box drops, informing the community of the vandalism as well as steps to preventing and reporting tree vandalism.

i. Penalties

Any work carried out on trees without approval or not in accordance with an approval or development consent will be dealt with in accordance with the relevant legislation. This may result in a Penalty Notice or legal action through either the Local Court or the Land and Environment Court against all parties involved in any breach of Local Environment Plan or Development Control Plan or any conditions of approval.

Where Council has sufficient evidence, it will seek prosecution for the offense.

Penalties vary depending on the severity of the offence and if the offence was committed by a corporate body or an individual. Penalties range from \$1,500 for an individual to \$6,000 for a corporation in the form of a Penalty Notice up to a maximum of \$5 million for an offence against the *Environmental Planning and Assessment Act 1979*.

c) Compliance

Where penalties have been applied and the developer or landholder is required to plant a replacement tree at a ratio of 2:1, Council may enforce compliance in the matter by utilising current internal systems such as NearMaps satellite mapping. Additional on-site investigation may also be carried out to ensure sufficient landscape area and replacement tree/s are installed. Council may require written proof of the replacement tree(s) ongoing health and maintenance from an AQF5 arborist at a specified point to avoid further penalties. The ongoing monitoring of the Significant Tree Register will also assist in enforcing compliance and spreading awareness of mature significant trees.

3. Trees in Streets

Street trees, loosely defined as ‘trees lining municipal streets’, are a common sight of urban landscapes. The main purpose of street trees is to provide aesthetic values for the community; but they also:

- Reduce the urban heat island effect by reducing temperatures through evaporative cooling and shading surfaces from the sun’s rays.
- Are valued for their contribution to biodiversity, providing shelter, nesting sites, food sources and important wildlife movement corridors for a range of native fauna.
- Provide fiscal benefits because higher housing prices are often associated with ‘leafier’ suburbs.
- Provide a worthwhile mechanism for carbon sequestration and storage.

While the benefits of street trees are many, street trees also have their disadvantages. Street trees require ongoing management because they can cause a number of problems for residents and the authorities responsible for managing the trees. Extensive root systems can damage below ground infrastructure and crack and uplift surrounding pavements.

Above the ground infrastructure such as high voltage transmission wires can also be damaged by a tree's branches and trunk.

Limbs, or even the entire tree, can fall due to high winds, disease, insect attack, or natural senescence. All of these problems pose a potential risk to public safety.

This part of the Policy contains the following:

- Species and selection
- Pruning and maintenance
- Removal and pruning
- Review of a Council decision on works to a Street Tree
- Planting and replacement
- Development activity, vehicle access and cross overs.
- Role of Street Trees as Wildlife Corridors
- Trees in Parks

3.1. Street Tree Species and Selection

Appropriate species selection is the most effective way of reducing the potential for damage caused by trees in the built environment such as footpaths, sewers and storm water infrastructure. The Hurstville Street Tree Management Study 2015 and Kogarah Street Tree Management Strategy and Masterplan 2009 provide a framework for street tree planting.

In considering suitable species selection the site, criteria include:

- Width of planting opportunity on nature strip, tree planting square, road shoulder or median strip.
- Soil depth and type.
- Street orientation and aspect for shade and sun.
- Existing character or 'avenue of trees' in the street.
- Traffic volume and speed.
- Location of crossings and traffic lights.
- Overhead obstructions or constraints and underground services.
- Pedestrian and vehicle use and need for visibility.
- Access for street cleaning equipment and garbage collection vehicles.
- Choosing species that have performed well in similar sites or in the same street.

In species selection, horticultural criteria including habit of growth, physical form, visibility around trunk and canopy, growth rate and longevity, tolerance of compacted soils with low aeration or poor drainage and excessive leaf/fruit drop/ invasive roots are considered.

The City's tree program has been designed to capture the essential aspects of the above criteria so that decisions about street tree selection can be made by matching the site conditions with a suitable species.

3.2. Street Tree Pruning and Maintenance

In managing street trees, pruning is an effective way of minimising or eliminating a number of risks including:

- Low branches near footpaths and roads.
- Routinely removing defects such as dead branches, crossing branches.
- Canopy thinning within tree tolerances to allow for street lighting and solar access.
- Damage to public and private infrastructure, including footpaths, boundary fences and underground utilities.
- Sight lines clearances for signs and traffic lights.

Pruning practices are aimed principally at preserving the overall health and vigor of the tree.

Council's tree management guidelines are consistent with the Australian Standard AS4373 – Pruning of Amenity Trees; Workcover Code of Practice – Amenity Tree Industry; and Workers Health and Safety requirements.

Pruning under electricity cables to the minimum clearances is authorised under Section 48 of the *Electricity Supply Act 1995* which effectively overrules Tree Preservation Orders or Development Control Plans and other environmental planning instruments, but not State heritage or protection orders.

Pruning works within 3m of power lines can only be carried out by suitably qualified personnel.

3.3. Request for Tree Pruning and Removal

Street tree maintenance through regular pruning is vital for the long term vitality of the tree. Pruning is undertaken by Council based on a proactive program of planned works. Unplanned (reactive) pruning will occur to trees that are damaged or have failures such as limb drop.

Council aims to manage its street tree program, to ensure:

- Co-ordinated removal and replanting of trees within a street rather than the removal of a single tree – as this provides improved succession planning for the street tree management program and cost effective infrastructure renewal.
- Single removal of a street tree will be considered if the tree poses significant risk to public safety, due to it being damaged or in poor health.
- Notification of residents in the street will be undertaken via a letter-box drop in the event that a co-ordinated removal of numerous street trees is approved. Notification will take place 10 days prior to the scheduled removal to allow for comment.
- Notification is undertaken via a sign placed on the tree where a single street tree is approved for removal.

The pruning of street trees can be instigated by Council or can be requested by the community.

Requests for removal of a street tree are to be lodged by the resident whose property adjoins the tree (i.e. the tree is located on the verge adjoining the residents property).

Council's qualified arborists conduct inspections using the assessment criteria outlined in Section 2. In addition to these criteria, the arborist will consider:

- The pruning history of the tree e.g. previous pruning in response to branch failure
- Location of the tree in relation to buildings and structures
- Whether the tree forms part of an avenue planting or habitat corridor
- The suitability of the species to the location.

Note - Where a street tree is recognised to have been vandalised, Council will conduct nearby letter box drops, informing the community of the vandalism as well as steps to preventing and reporting tree vandalism. See Section 2.7. b) 'Tree Vandalism and Penalties'.

3.3.1. Approval Framework for Street Trees

Section 2 provides an outline of the works to a tree that are exempt and works that require approval by a tree permit or development application. This approval framework also applies to trees on public land. The procedure for the approval process for works to street trees is outlined below:

- The approval for the removal of a tree 10 m and under is determined by the Tree Management Officer.
- The approval for the pruning to the canopy and works to the root system of a tree is determined by the Tree Management Officer.
- The approval for the removal of a tree 10m and over is determined by the Director Assets and Infrastructure following advice and recommendation from Tree Management Officer and documented VTA.
- The approval for the removal of multiple street trees in a single street or whole street tree is determined by the Director Assets and Infrastructure.
- The approval for the removal of trees proposed as part of Councils capital works tree replacement program is determined by the Director Assets and Infrastructure.

Note - Works to trees that are located on sites listed as a heritage item, are listed on the significant tree register or are identified as vulnerable threatened or endangered ecological community requires approval through a development application. The provisions exclude pruning works completed by Council on trees on public land for the purpose of maintaining

tree health or public safety.

3.4. Review of a Council Decision on Works to a Street Tree

The person who lodged the original request can request a review of the decision regarding the removal of a street tree through writing to Council and providing information and evidence relating to the removal of the street tree. The request for the review of the Officer's decision will be assessed by an alternate Tree Management Officer. The person's request and Officer's report and recommendation will be reviewed by the Internal Tree Review Panel.

The Internal Review Panel will comprise 3 members from the following staffing group: Director Assets and Infrastructure, Director Environment and Planning, Manager Infrastructure, Manager Environment, Health and Regulatory Services, and Manager Development and Building.

The Panel will review the determination based on criteria such as:

- The environmental, cultural and amenity value of the tree.
- The effect on the health of the tree from branch and/or root pruning.
- Whether the tree shows poor form and shape/vigour typical of the species.
- Whether the tree is located in a habitat corridor and provides habitat or fauna canopy connectivity.
- Contribution to the streetscape.
- The evaluation and recommendations of any arborist reports.
- The occurrence (or lack of) other vegetation nearby and whether appropriate replacement species can be planted.
- Part of a group or series of street trees.
- Applicant's reason for requiring the works to the tree – pruning or removal.
- Assessment and recommendation of the Assessing Officer.

3.4.1. Street Tree Replacement

The majority of urban trees have a life span of between 20 to 80 years due to the constraints of growing in a built environment.

Trees may need to be removed for a variety of reasons from vandalism, poor species performance to damage to underground utilities that can't be repaired etc. Often though, it is because they are over-mature and naturally start to decline and may become hazardous.

Wherever possible, the community is notified of tree removal and replacement works. At times, though, emergency tree removal is sometimes necessary and may preclude advance notification of the works to the community. To ensure there is no net loss of urban canopy cover as trees are removed, a replacement tree will be planted as soon as practicable. If tree removal occurs late in the planting season planting may be held over until the next

season. To minimise the loss of tree canopy cover, replacement planting will use advanced trees.

Occasionally, residents may request a replacement tree, which is unable to be planted. Street trees may not be able to be planted where there is:

- Sightline restrictions
- A history of damage to underground services that are unable to be repaired adequately to allow for replacement tree planting
- Insufficient clearance from utilities
- Shop awnings and other structures.

3.4.2. Development Activity, Vehicle Access and Cross-Overs

Development activity occurring on a property, vehicle access and driveways can sometimes generate issues relating to mature and established street trees.

Construction activity associated with the development of a site such as truck movements, storage of materials and approaches to construction can compromise the health and vitality of a street tree. A development application will be conditioned to ensure the protection of a street tree during the construction phase in accordance with Australian Standard AS 4970 – Protection of Trees on Development Sites.

To ensure the tree's protection and ongoing health following the completion of a development, a development application may be conditioned requiring the payment of a street tree security payment, calculated using the Thyer Method of Valuation (Thyer Method 2011 (2000b formula)). The security payment and the implementation of the Council's regulatory provisions provide the community with certainty regarding the ongoing health of the City's street trees. Refer to item 1.21 GRC Schedule of Fees and Charges - Deposit for Damage during Construction - Security against compliance with tree preservation requirements/conditions (Street Trees).

In relation to applications for crossovers and driveways, Council will assess each application on its merits and promote alternatives to vehicle crossovers including amending designs to maintain the tree or to ensure on going vitality. To allow a comprehensive assessment of the tree works the applicant may be required to conduct a Root Mapping Investigation and Report by a qualified AQF5 Arborist (See Appendix 2).

Where a street tree is necessitated to be removed as a result of an approval for driveway relocation, drainage works or a development, the applicant will be required to fund the removal of the impacted tree and its replacement with the installation of a mature specimen.

3.5. Role of Street Trees as Wildlife Corridors

Streets represent long sections of contiguous public lands, making them an important component in the enhancement of canopy to a minimum of 40% and also assisting in

biodiversity corridors. Planting programs can be administered by a single authority (Council) to ensure appropriate design for biodiversity and public amenity.

As such, street tree plantings will be prioritised in areas linking remnant bushland and coordinated with adjacent private landowners through the circulation of a Backyard Biodiversity Guide.

Street networks identified as highly suitable for such improvements are located:

- Between Gannons Park and Hurstville Golf Course east-west
- Between Gannons Park and Peakhurst Park stretching north, then north-west to Riverwood Park
- Between the junction of Woniora Rd and King Georges Road to Poulton Park
- Between Kyle Williams Reserve and Carss Bush Park.
- Peshurst St stretching North from Poulton Park to Rasdall Park
- Between Dairy Creek, Boundary Road and Olds Park and
- Between Harold Fraser Oval and Hurstville Train Station, stretching north-west.

3.6. Trees in Parks

Trees in parks provide an invaluable local resource, typically forming the interface between urban areas and remnant native vegetation. Trees in parks represent additional opportunities for urban greening, with limitations of trees on streets, such as above and below ground utilities, vehicle carriageway clearances and proximity to private properties typically being less pronounced. However, where parks interface with streets or in areas of high pedestrian traffic, species in **Appendix 1** will be prioritised. Species chosen are to more closely emulate native vegetation communities. Consequently, exotic species will be avoided and native species replicating endemic vegetation already present or in nearby bushland reserves is to be prioritised.

An important component of revegetation of public reserves is the enhancement and creation of new biodiversity corridors. Several large public parks have been identified as suitable areas for such works including:

- Renown Reserve to Moore Reserve;
- Bell Park to Quarry Reserve; and
- Harold Fraser Oval to Todd Park.

Street tree planting for biodiversity corridors elsewhere will also consider the Sydney Green Grid and SSROC Connected Corridors for Biodiversity, which Council has been instrumental in identifying. The goal is to create networks of corridors between existing natural areas throughout the Local Government Area.

4. Trees on Private Land

Trees on private land are located on land belonging to residents, commercial enterprises, community groups, private institutions such as schools, hospitals and churches, and public land.

Trees on private land are valued and treasured because they:

- Provide privacy
- Help to soften buildings or outlooks
- Provide natural cooling
- Enhance wildlife corridors
- Contribute to the character of the area.

This part of the Policy contains the following:

- The determination framework
- Development and trees
- Tree replacement program
- Review of tree decisions
- Tree disputes between neighbours
- Private trees overhanging public / council land
- Role of the community in Urban Canopy Enhancement.

Note - Applications for the removal or pruning of a tree beyond the boundary line in a neighbouring property will not be accepted without the tree owners' written consent, as a signatory on the Tree Permit. Council does not resolve tree disputes between neighbours.

4.1. Determination Framework for the Management of Trees

The Planning Framework governing the management of trees on private land is outlined in:

- State Environmental Planning Policy (Vegetation in Non Rural Areas) 2017
- Hurstville LEP 2012
- Kogarah LEP 2012
- Kogarah DCP 2013 – B2 Tree management and Green Web
- Hurstville DCP no.1 (Amendment 5) Appendix 1 Preservation of Trees and Vegetation.

The following information is to be read in conjunction with the provisions of the LEP's/ DCP's.

The approval requirements for undertaking work (removal or pruning) on any part of the tree above or below ground are outlined in Section 2 Assessment Framework.

4.2. Development and Trees

In planning the design of a development, consideration must be given to trees on the subject site and on the adjoining land. Elements to consider include:

- Designs to minimise or avoid potential conflict between trees and structures – on site and on any neighbouring property
- Existing prominent trees should be retained and incorporated as part of the design within an enforceable Tree Protection Zone (TPZ) being 12 x trunk diameter (DBH) when measured at 1.4 metres from ground level
- Existing and future tree growth both above and below ground are to be a consideration when building close to a tree
- Sufficient landscape area and deep soil planting areas must remain to allow for replanting of replacement trees.

4.2.1. Information Required with a Development Application or Tree Permit

Any application for tree works for the removal or pruning of a tree(s)/roots should be accompanied with supporting information/evidence such as documented and photographic history of branch failures, the weather conditions at the time of the branch failure, sewer blockages etc.

This supporting evidence must include a report from a consulting arborist (AQF Level 5) where:

- Major work or removal is proposed on heritage listed or significant trees or trees considered prominent in a heritage conservation area.
- There is insufficient evidence to support the removal of a tree as assessed against the criteria in this Policy.

Council may request the applicant provide an AQF Level 5 Arborist's Report for more complex tree assessments including details such as an aerial inspection, root mapping or identified fungal or pest problems, or internal diagnostic assessment. Further supporting evidence may also be required from a Structural Engineer or Licensed Plumber if buildings or underground services are affected.

Details of requirements for arborist and other specialist reports are listed in Appendix 2.

Note - Further information on the need for a determination, application requirements and determination process can be found in the relevant sections of the Development Control Plans.

4.3. Tree Replacement Program

To maintain urban tree canopy cover within the City, when approval is granted to remove a tree, Council will decide on and require the applicant to do one of the following:

- Replace the tree with two or more advanced approved species (45L or greater) which are to be established on the property and maintained to maturity. The tree replacement ratio is to be 2:1.
- Or, payment of an offset fee (per tree), valued by the Thyer Method of Valuation (2011) as outlined in item 1.11 – Tree Management of the GRC Schedule of Fees and Charges – Offset Fee for Tree Replacement (per tree) for the planting of trees on private land.

Audit checks for the replacement plantings may be carried out by Council. Refer to **Appendix 1** for a list of recommended species for replacement tree(s).

The planting is to occur within 6 weeks from when the removal is provided via a tree permit or the development consent will outline the timeline for when the replacement planting is to occur.

The action, whether replacement planting or payment of an offset fee to be taken by the applicant will be determined by the Assessing Officer as part of the assessment and determination of the DA or tree permit. Where replacement planting is required the landholder is responsible for the maintenance and establishment of the replacement tree(s).

Where it is necessary, Council will determine or request the financial value of a tree using the Thyer Method of Valuation (Thyer Method 2011 (2000b formula)).

4.4. Review of a Tree Decision

4.4.1. Development Application

Under the provisions of the Environmental Planning and Assessment Act (1979), an applicant may ask Council to review the determination of development consent or a condition within that consent:

- If they are dissatisfied with Council's assessment of their tree, they can submit an application for Review of Tree Determination.
- The application must provide a report from a consulting arborist (AQF Level 5) with any additional reports requested by Council relevant to the stated problem e.g. a structural engineer or licensed plumber report.
- The review of the original determination will then be conducted by another Council Official or consent authority.
- Should the review uphold the original determination there is a right to appeal the decision in the Land and Environment Court

4.4.2. Review of a Council Decision on Works to a Tree on Private Land

The person who requested approval to undertake works to a tree via the lodgement of a tree removal or pruning application can request the review of a determination of the application for tree works. The review process has 2 stages; Stage 1 Review is performed by an alternate Council Officer with an associated fee and Stage 2 Review is performed by an Internal Review Panel with an associated fee. The fees are found in item 1.11 of the GRC Schedule of Fees and Charges – *Review of Tree Removal and Pruning Application on Private Land*.

Please note the following:

- The review/ appeal must be lodged within 6 months of the date of determination
- The review/appeal must be accompanied by additional information or report(s) not already provided in support of the application
- A fee applies to reviews/appeals on previous tree determinations.

Stage 1 Review

The applicant lodges a Review Tree Management Application Form with associated fee, found on Council's website, requesting a review of the decision relating to works to a tree sought via the tree permit. The review will be undertaken by an alternate Council Tree Management Officer.

This request is to provide additional information to respond to the issues/ concerns raised in the original determination report.

Appendix 2 may assist in providing guidance on the type of information to be submitted to support a request for a review of a determination.

Stage 2 Review

If a person is not satisfied with the outcome of the Stage 1 Review they can request, via a Review Tree Management Application Form and associated fee, a Stage 2 Review – where the determination is reviewed by an Internal Panel comprising senior staff from across Council.

The request is to provide additional information to respond to the issues/concerns raised in the original and alternate determination report and may require the submission of an arborist report and other supporting information.

Appendix 2 may assist in providing guidance on the type of information to be submitted to support a request for a review of a determination.

The Internal review panel will comprises 3 members from the following staffing group - Director Assets and Infrastructure, Director Environment and Planning, Manager Infrastructure, Manager Environment, Health and Regulatory Services, and Manager Development and Building.

The Panel will review the determination based on criteria such as:

- The environmental, cultural and amenity value of the tree.
- The effect on the health of the tree from branch and/or root pruning.
- Whether the tree shows poor form and shape/vigor typical of the species.
- Whether the tree is located in a habitat corridor and provides habitat or fauna canopy connectivity.
- Contribution to the streetscape.
- The evaluation and recommendations of any arborist reports.
- The occurrence (or lack of) other vegetation nearby and whether appropriate replacement species can be planted.
- Part of a group or series of street trees.
- Applicant's reason for requiring the works to the tree – pruning or removal.
- Assessment and recommendation of the Tree Management Officer.

4.5. Tree Disputes Between Neighbours

Neighbours have the right to prune the branches of a tree overhanging their property without a Tree Permit Application, but only where such pruning is classified as exempt works, including undesirable species contained in Section 2.4.

This pruning can only occur to the boundary line and should occur without crossing the boundary to undertake the pruning. If pruning requires working above ground with power equipment it is best to engage a trained arborist. Pruning of large, mature trees also requires a thorough knowledge of tree physiology and pruning methods. All pruning must be carried out in accordance with the Australian Standard – AS 4373 – 2007 *Pruning of Amenity Trees*.

It is advisable to approach the neighbour prior to pruning.

All other applications for pruning of a neighbour's tree will require a tree permit. An application to prune overhanging branches beyond the boundary line or remove trees from a neighbouring property must have the signature of the owner of the tree(s).

Council does not have the regulatory powers to compel neighbours to prune or remove trees that may be causing damage or a nuisance to their neighbour, nor can Council mediate in disputes. Conflict over the management of private trees on neighbouring properties is the responsibility of both neighbours to discuss and resolve.

Residents are firstly advised to contact their local Community Justice Centre to seek mediation. If that avenue is unsuccessful they can make an application to the Land and Environment Court under the *Trees (Disputes between Neighbours) Act 2006*.

The Act only applies to trees on private property and not Council owned trees.

4.6. Private Trees Overhanging Council Land

Where private trees overhang Council property, footpaths or roadways, the maintenance of the tree is regarded as the owner's responsibility and the owner should undertake pruning when requested. If the owner does not comply with a request, an order for the pruning of overhanging branches can be issued by Council – especially if there is threat to life or property. Council may also undertake the necessary tree works and then recover the cost of the works from the tree owner.

4.7. Role of Community Engagement in Urban Canopy Enhancement

Vegetation on private land is pivotal to enhancing urban canopy to a minimum of 40%, particularly through identified biodiversity corridors (Vegetation Mapping Report 2018). As such, community co-operation and engagement is essential. Private landowners in key corridor areas identified through the Vegetation Mapping Report 2018, Sydney Green Grid and associated SSROC Connected Corridors for Biodiversity will be informed as to the benefits of increasing their vegetation coverage. This will be done through targeted delivery of a Backyard Biodiversity Guide, as well as fostering engagement with:

- Existing local Bushcare groups
- Council's community nursery through plant giveaways
- Other community groups such as local Probus Clubs or conservation societies.

5. Trees and Development Sites

The retention of mature and semi-mature trees in new development provides a range of benefits such as climatic modification, spatial definition, wildlife habitat and defining local character. The marketability and attractiveness of a development is reinforced through the retention and protection of these trees.

In planning the design of a development and undertaking the construction, the following should be considered:

- Minimise or avoid potential conflict between trees and structures – on site and on any neighbouring property.
- Existing prominent trees should be retained.
- Existing and future tree growth both above and below ground must be a consideration when building close to a tree.
- Building construction methods that will minimise the impact on trees and their root systems.
- Trees identified to be retained on the site and on adjoining land are to be protected in accordance with Australian Standard AS 4970 – Protection of Trees on Development Sites.
- Preliminary impact assessments are required for trees of value that may be impacted by a proposed development.

Note - Preliminary arboricultural reports are useful in the early stage of development

planning and it is useful to develop the design layout in such a way that trees selected for retention are provided with enough space.

Arboricultural impact assessments are required for trees of value that may be impacted by a proposed development. The report will explain design and construction methods proposed to minimise impacts on retained trees where there is an encroachment into the calculated Tree Protection Zones (TPZ's) being 12 x trunk diameter (DBH) when measured at 1.4 metres from ground level.”

In preparing a development application, consideration should be given to the provisions of:

- Hurstville LEP 2012
- Kogarah LEP 2012
- Kogarah DCP 2013 – B2 Tree Management and Green Web
- Hurstville DCP no.1 (Amendment 5) Appendix 1 Preservation of Trees and Vegetation.

The section addresses:

- Site plan and the location of trees.
- Information required for the assessment of trees on development sites.
- Heritage trees.
- Tree on land neighbouring a development site.
- Conditions of Consent relating to trees.
- Protection of Trees within development sites in identified Biodiversity Corridors.

5.1. Site Plan and the Location of Trees

All trees located on site must be shown on the site plan submitted with the Development Application. This includes trees on adjacent properties and any street or public trees within 4 metres of the site boundary. The site plan must include:

- The exact location of all trees, including street trees, with each tree numbered
- For each tree: the common/ scientific name, height, canopy spread, trunk diameter at 450mm above ground level and number of trunks if more than one and
- Which trees will be retained, removed, pruned or transplanted.

The tree assessment will be undertaken in accordance with Australian Standard AS 4970 – Protection of Trees on Development Sites and criteria outlined in Section 2.

5.2. Information Required for the Assessment of Trees on Development Sites

If trees on a site or neighbouring property are deemed to have retention value and the proposed development may have an impact on the vitality of the trees, it will be necessary for the Development Application to include an arboricultural impact assessment report, or

similar. The report is to be prepared by a qualified arborist, tree surgeon or the like with qualification equivalent to Australian Qualification Framework Level 5.

The report is to include as a minimum:

- Details and estimates of Tree Protection Zones (TPZ's) being 12 x trunk diameters (DBH) when measured at 1.4 metres from ground level and Minimum Setback Distances for each numbered tree.
- A separate tree plan clearly showing all trees to be retained/removed/transplanted and each tree numbered.
- Tree assessment and retention value based on an industry accepted standard
- A comprehensive discussion/assessment of the impact of construction works including:
 - Details of any soil modification i.e. cut and fill excavations
 - Details of any tree pruning for building clearance or tree health
 - Site works including hoardings; temporary site structures; wash-down areas and vehicle access
 - Impact of the proposed building structure and location of services
 - Impact from landscape modification on site trees
 - Details of any replacement planting
- Root mapping report where required
- Tree protection specifications and signage
- A post-construction tree maintenance/monitoring program which can be used as conditions should the application be approved.

Further details regarding the information to be provided as part of a Development Application in relation to trees and development sites is contained in Appendix 2.

5.3. Heritage Trees

For trees on a heritage listed premises or on the Significant Tree Register or considered prominent a in Heritage Conservation area, an Arboricultural Impact Assessment must be submitted with the development application.

In the case of trees listed on the Significant Tree Register, the architectural proposal should aim to integrate the tree with the built form and promote its environmental values.

5.4. Trees on Land Neighbouring a Development Site

Trees located on adjoining sites or within 4 metres of the site, including street trees, if considered of value and potentially impacted by the development then the construction process will need to be assessed as part of determining the development in relation to:

- Protection of the tree during the demolition and construction phases
- Vitality and stability of the tree in the long term
- Effects on Hydrology
- Changes to wind loading on trees.

These matters are required to be addressed in the Arboriculture Impact Assessment Report.

5.5. Conditions of Consent for Trees

The approval for the development will contain a set of conditions that may require the following:

- Details of the trees to be removed from the site.
- The lodgement of a street tree security payment to ensure the protection of trees on public land. The security payment is based on Item 1.21 - GRC Schedule of Fees and Charges - Security for Damage during Construction - Security against compliance with tree preservation requirements/ conditions (Street Trees).
- Requiring the applicant to fund the removal of a street tree(s) and the planting and establishment costs of replacement street tree(s).
- Replace the tree at a replacement ratio of 2:1 with two or more advanced approved species (45L or greater) which is to be established on their property and maintained to maturity. Or, the payment of an offset fee as valued by the Thyer Method of Valuation (2011) for the planting of trees on private land. The offset fee is based on Item 1.11 – Tree Management of the Schedule of Fees and Charges – Offset Fee for Tree Replacement (per tree).
- Requiring the submission of an arborist report ensuring the long term health and vitality of the trees on the subject site or adjoining site prior to the issue of any occupation certificate.

5.6. Protection of Trees within Development Sites in Identified Biodiversity Corridors

The important biodiversity corridors identified in the Vegetation Mapping Report 2018 include private lands and streets in the following areas:

- Between Gannons Park and Hurstville Golf Course
- Between the junction of Woniora Road and King Georges Road to Poulton Park; and
- Between Kyle Williams Reserve and Carss Bush Park

The existing mature native canopy in these corridors provides an important and slow-to-replace resource for local fauna, as well as being pivotal to the urban canopy enhancement target of 40%. Protection of these mature trees will also be aided by the Significant Tree Register.

If clarification is needed on whether a development site is located in an identified biodiversity corridor or whether a tree is listed on Council's Significant Tree Register, further contact should be made with Council staff.

VERSION CONTROL AND CHANGE HISTORY

Version	Amendment Details	Policy Owner	Period Active
1.0	Complete new Georges River Council Interim Tree Management Policy (Council Resolution ENV003-19)	Director Assets and Infrastructure	25/02/2019 – 22/04/2019
2.0	Amendments to Interim policy addressing the resolutions of Council at its meeting on 25/2/19. Policy no longer considered 'interim' & re-named "Tree Management Policy".	Director Assets and Infrastructure	23/04/2019

APPENDIX 1 – TREE PLANTING

If a request to remove trees from your property has been successful, you are required to replant one or more trees at a replacement ratio of 2:1 anywhere within your property boundary within six weeks.

Tree Species

A selection of species below is provided to ensure you comply with these requirements when replanting a tree within your boundary:

Desirable Species – Locally Endemic or Native

Botanical Name	Common Name	Height to:
<i>Acacia implexa</i>	Two-veined Hickory	8m
<i>Acacia parramattensis</i>	Sydney Green Wattle	5m
<i>Acmena smithii</i>	Lilly Pilly	8m
<i>Allocasuarina littoralis</i>	Black She-Oak	5m
<i>Allocasuarina torulosa</i>	Forest-Oak	30m
<i>Angophora costata</i>	Smooth-Barked Apple	25m
<i>Angophora floribunda</i>	Rough-Barked Apple	20m
<i>Avicennia marina</i> subsp. <i>australasica</i>	Grey Mangrove	4m
<i>Banksia integrifolia</i>	Coastal Banksia	10m
<i>Banksia serrata</i>	Old Man Banksia	8m
<i>Casuarina glauca</i>	Swamp Oak	20m
<i>Ceratopetalum apetalum</i>	Coachwood	20m
<i>Corymbia gummifera</i>	Red Bloodwood	20m
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	10m
<i>Eucalyptus botryoides</i>	Bangalay	18m
<i>Eucalyptus haemastoma</i>	Scribbly Gum	15m
<i>Eucalyptus pilularis</i>	Blackbutt	30m
<i>Eucalyptus piperita</i>	Sydney Peppermint	15m
<i>Eucalyptus punctata</i>	Grey Gum	30m
<i>Eucalyptus resinifera</i>	Red Mahogany	20m
<i>Eucalyptus robusta</i>	Swamp Mahogany	30m
<i>Ficus rubiginosa</i>	Port Jackson Fig	15m
<i>Glochidion ferdinandi</i>	Cheese Tree	8m
<i>Syncarpia glomulifera</i>	Turpentine	20m

Other Suitable Species – Native and Exotic

Botanical Name	Common Name	Height to:
<i>Acmena smithii</i> var 'Minor'	Dwarf Lilly Pilly	6m
<i>Acer palmatum</i>	Japanese Maple	6m
<i>Arbutus unedo</i>	Strawberry Tree	6m
<i>Backhousia citriodora</i>	Lemon Scented Myrtle	8m
<i>Betula pendula</i>	Silver Birch	10m
<i>Buckinghamia celsissima</i>	Ivory Curl Flowering Tree	10m
<i>Callistemon citrinus</i> 'Endeavour'	Crimson Bottlebrush	5m
<i>Calodendrum capense</i>	Cape Chestnut	10m
<i>Camelia japonica</i>	Camelia	5m
<i>Citharexylum spinosum</i>	Fiddlewood	10m
<i>Cupaniopsis anacardioides</i>	Tuckeroo	8m
<i>Eucalyptus ficifolia</i>	Red Flowering Gum	6m
<i>Flindersia australis</i>	Australian Teak	20m
<i>Fraxinus oxycarpa</i> 'Raywoodii'	Claret Ash	10m
<i>Gordonia axillaris</i>	Fried Egg Plant	9m
<i>Harpullia pendula</i>	Tulipwood	10m
<i>Hymenosporum flavum</i>	Native Frangipani	12m
<i>Jacaranda mimosifolia</i>	Jacaranda	12m
<i>Koelreuteria paniculate</i>	Golden Rain Tree	8m
<i>Lagerstoemia indica</i>	Crepe Myrtle	7m
<i>Lophostemon confertus</i>	Brush Box	15m
<i>Magnolia</i> 'Little Gem'	Little Gem Magnolia	6m
<i>Pistacia chinensis</i>	Chinese Tallow Tree	10m
<i>Pyrus calleryana</i> 'Chanticleer'	Pear Tree	10m
<i>Stenocarpus sinuatus</i>	Firewheel Tree	12m
<i>Syzygium leuhmannii</i>	Lilly Pilly	10m
<i>Tristaniopsis laurina</i>	Water Gum	8m
<i>Ulmus parvifolia</i>	Chinese Elm	15m

APPENDIX 2 – GUIDE ON INFORMATION TO SUPPORT TREE PERMITS AND DEVELOPMENT APPLICATIONS

ARBORIST REPORTS

Who Should Prepare an Arborist Report?

The Report must be prepared by a qualified arborist who holds the Diploma of Horticulture (Arboriculture) Australian Qualifications Framework of Level 5. Council will consider reports from consulting Arborists who are members of either the Institute of Australian Consulting Arboriculturalists (IACA) or Arboriculture Australia (AA) with a demonstrated high level of tree assessment, diagnosis and report writing.

The Report is to include a statement from the Arborist that their Report is an impartial assessment of the tree(s) and their condition based on the available evidence and projected outcomes.

What Information is Required?

The following information is required in the preparation of an Arborist's report:

- The client, specified author (contact and title of qualified purpose of report, subject)
- Site and date(s) of inspection
- Methodology of techniques used in the report
- A summary of findings
- A site plan showing the location of all relevant trees, numbered to correspond with text in the report. The site plan must accurately show the location of each tree and existing or proposed buildings/structures and above/underground services
- A table for each tree detailing:
 - Common name and scientific name
 - Approximate height, age and canopy spread
 - Diameter at one meter height and number of trunks if more than one
 - Condition and structural health of the tree(s), e.g. signs of dieback and other trunk indications, loss of branches, leaves, stunted/distorted growth, wounds, cavities, cracks, included bark/co-dominant branches, pests and diseases and root conditions/issues
 - Hazard assessment of any of the above issues where relevant
 - Estimates of the tree(s) useful life expectancy using accepted industry methods.
- A summary and discussion of other relevant tree and site information, e.g. nearby structures, soil and drainage characteristics, habitat, landscape and amenity values, weather exposure and previous human intervention
- If pest or disease are affecting the health of the tree(s), further expert diagnosis and discussion of treatment may be required
- Supporting evidence such as test results, annotated and relevant photographs
- Financial valuation of the relevant tree(s) using the Thyer Method of Valuation (Thyer Method 2011 (2000b formula))

- Discussion of all available options and the reasons why they are recommended or not recommended, e.g. can services be diverted to avoid root pruning, can a structure be relocated or rebuilt to retain the tree?
- Recommended actions and the reasons for their adoption
- Resource material to be referenced in an accepted method. References not used in the report are not to be included
- Reports from any Resistograph/Tomograph testing must include copies of the charts, be clear and legible and have scientific supported conclusions.

Any report lacking in sufficient detail or applying incorrect analysis or subjective opinion may result in the application being refused or some or all of the recommendations rejected.

Other/Additional Arboricultural Information

Additional arboricultural information may be required as part of the arborist's report.

These include:

AERIAL OR CANOPY INSPECTION REPORT

Aerial inspection of the upper trunk and branches of a tree is recommended if decay or poor branch formation is evident or suspected and there is a documented history of branch failure.

The findings of the aerial tree inspection together with photographs are to be included in an arborist report. The report and recommendations must be prepared by an arborist with a minimum qualified of AQF 5 level.

ROOT MAPPING REPORT

Root mapping is the locating and plotting of a tree's roots to determine the size and direction of root growth. A trench is excavated along a determined line to a specific depth, usually by hand or with the assistance of a hydraulic water or air knife. Any exposed roots must have their location, depth, size and diameter recorded. No roots are to be severed and general root disturbance must be minimised. The excavated soil must be replaced promptly.

The results of the excavation are then analysed to determine the impact that a proposed building/infrastructure/placement of services may have on the structural stability or long term health of the tree(s). These results must then be collated and presented in report form and include:

- A site plan showing the line, length and width of excavation, exact location of tree(s) and proposed buildings/structures or underground services
- Photographs of the excavation lines clearly showing their location on the site plan and close up shots of trenches with an article to show scale

- Findings from the results of excavation detailing, for example, exact location, depth and size of roots, soil profile presence of pipes etc.
- Site specific recommendations based on the findings and discussion. An explanation of why options are recommended must be included; and
- References used in the preparation of the report.

A root mapping report may be an addition to an arborist report or a separate report. The report must be prepared by an arborist with a minimum qualification of AQF 5.

TREE TRANSPLANT METHOD STATEMENT

If a tree is proposed to be re-located on site, a report must be submitted with the application outlining the methods of transplantation. Council may also stipulate during assessment of any application that a tree be re-located and a statement be prepared.

If a tree is proposed to be re-located on site, a report must be submitted with the application outlining the methods of transplantation. Council may also stipulate during assessment of any application that a tree be re-located and a statement be prepared.

The statement must include:

- A site plan
- A timetable of works
- Details of site preparation including minimising damage to adjacent vegetation
- Transplantation method e.g. machinery to be used; excavation techniques; rootball and crown treatments and stabilisation measures
- Storage: on or off site; details of monitoring and tree care
- Program of monitoring: during transplant process; after care and maintenance stages.

The statement must be prepared by an arborist with a minimum qualification of AQF 5 level.

TREE MONITORING REPORT

Where required or as listed in a development condition, the site arborist may be asked to provide monitoring or maintenance reports to assess the health and condition of tree(s) on development sites. This is to include:

- A site log showing the date of each inspection, the person who performed the inspection, the tree(s) inspected or tested, the maintenance activities performed, any repairs undertaken or required to be undertaken and any substantial breaches or non-conformances
- The entries in the log book must be signed by the arborist performing the inspection
- Copies of log entries to be submitted monthly

- Where stated, photographs of the tree(s) at nominated stages to be submitted. Photographs to include full profile and close-up shots taken from the same location and at the same time of day
- All maintenance to be continued for the stated duration and intervals.

The timing and duration of the reports will be determined according to the likely impact of construction works on the trees to be retained or the maintenance period for newly planted trees or impacted trees.

ARBORICULTURAL IMPACT ASSESSMENT FOR TREES ON DEVELOPMENT SITES

Trees on or adjacent to development sites that will be affected by proposed construction works require the following information:

- Details and estimates of Tree Protection Zones and Minimum Setback Distances for each numbered tree based on the Australian Standard AS 4970 – Protection of Trees on Development Sites
- A separate tree plan clearly showing all trees to be retained/removed and each tree numbered
- Tree assessment and retention value based on the Thyer Method of Valuation (Thyer Method 2011 (2000b formula))
- A comprehensive discussion/assessment of the impact of construction works including the:
 - Details of any soil modified i.e. cut and fill, excavations
 - Details of any tree pruning for building clearance or tree health
 - Site works including hoardings; temporary site structures; wash-down areas and vehicle access
 - Impact of the proposed building structure and location of services
 - Impact from landscape modified on site trees
 - Details of any replacement planting.
- Root mapping report where required
- Tree protection specific and signage
- An outline of WHS and tree protection procedures to be followed on site and appropriate induction for all on-site staff and sub-contractors
- A post-construction tree maintenance/monitoring program which can be used as conditions should the application be approved
- An impartial assessment of the above impacts with specific recommendations for tree protection must be included in the report or detailed in a separate tree protection plan.

Trees on adjoining properties or public land within 4 metres of the site must also be assessed if construction or site works will occur within their tree protection zones.

STRUCTURAL ENGINEERS REPORT

When is a Structural Engineer's Report Required?

Supporting evidence in the form of a Report may be required from a Structural Engineer where:

- Evidence must clearly show that the tree is the direct cause of the existing identified damage to a significant structure from tree roots
- Alternative design is required to minimise tree root damage to a prominent tree that may be affected by construction works.

Who Should Prepare a Structural Engineer's Report?

Council recommends that a Report be prepared by an Engineer with tertiary qualified in structural engineering and a minimum of five years post graduate experience.

What Information is Required?

The following information is required in the preparation of the Structural Engineer's Report:

- The client, specific author (contact and title of qualification) purpose of report and subject
- Site and date(s) of inspection
- Methodology of techniques used in the report
- A summary of findings
- A site plan showing the location of all relevant trees, buildings, pathways, underground services etc. The site plan must accurately show the location of each tree
- Detailed site description and site usage
- Detailed description of the footings of the existing or proposed building and whether the footings comply with current building regulations
- Geotechnical information
- Detailed description of methods to isolate building foundations from tree roots
- Discussion of all options available and why they are/are not recommended, for example, can the tree remain with minor modification of building design
- Recommendation of the preferred option and the supporting reasons.

Additional arboricultural information may be required such as a root mapping report or a supporting report from a consulting arborist.

Any report lacking in sufficient detail or applying incorrect analysis or subjective opinion may result in the application being refused or some or all of the recommendations rejected.

LICENSED PLUMBERS REPORT

If tree roots are suspected of contributing to blocked sewer or storm water pipes, a report from a licensed plumber may be required as supporting evidence. The report must be a balanced and objective assessment of the problem and is to include:

- A clear and legible sewer or storm water diagram
- Exact site of suspected blockages in relation to location of the tree(s)
- Documented history of previous blockages together with photographic evidence of roots retrieved
- Objective assessment as to the age and condition of the affected pipes
- Details of the alleged damage and point of entry of tree roots. CCTV drain camera evidence must be included to show damage and presence of tree roots within pipes or drain. The evidence must conclusively show that significant damage has initially occurred as a direct result of the tree(s).
- Balanced and objective discussion of practical methods of preventing further blockages, e.g. replacing affected section of pipeline, or re-lining of the pipe.

PEST/DISEASE CONTROL REPORT

If pests or diseases are affecting the health of a tree/s, a report may be required from a licensed pest control operator separately or in conjunction with a consulting arborist.

The report is to include:

- Evaluation and discussion of the impact of the pest/disease on the long term health and structural condition of the tree
- Recommended treatment and management program.

TREE PROTECTION ZONES

A specific area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree is to be retained where the tree is potentially subject to damage by development.

The Tree Protection Zone is calculated as 12 x trunk diameter (DBH) when measured at 1.4 metres from ground level. Once calculated this area is to be fenced off as an exclusion zone that is not to be entered.

The Australian Standard AS 4970 Protection of Trees on Development Sites provides guidelines for how TPZ's are calculated, how to protect root zones, type of fencing recommended for use and how the TPZ should be maintained. This document, combined with the arboricultural advice of a Consulting Arborist (AQF level 5) should be consulted when planning any work in the vicinity of trees.