

WAVERLEY COUNCIL TREE MANAGEMENT PLAN

POLICY

Adopted October 2007





Contents

	Introduction	5
Chapter 1	Key Local Issues	7
	1 Urban forest and canopy cover	7
	2 Tree selection	9
	3 Trees and views	13
	4 Tree vandalism	14
	5 Effectiveness of the Tree Preservation Order	14
	6 Habitat networks	15
	7 Pedestrian links	17
	8 Ecologically Sustainable Development	18
	9 Public tree removal	18
	10 Communication	18
	11 Planning controls	20
	12 Greening Masterplan	21
Chapter 2	Trees in streets	23
	1 Public liability issues	23
	2 Pruning for health and safety	28
	3 Managing new and replacement street trees	32
	4 Public consultation and notification	34
	5 Tree species diversity and tree selection	36
	6 Traffic issues	37
Chapter 3	Trees in parks	38
	1 Maximise aesthetics and amenity in parks	38
	2 Habitat corridors	39
	3 Remnant vegetation	41
	4 Community participation and consultation	43
	5 Bush regeneration	43
	6 Increased canopy cover	43
	7 Crime Prevention Through Environmental Design (CPTED) principles	44
	8 Plans of Management	44



Chapter 4	Trees on private land	45
1	Tree Preservation Orders	45
2	Disputes between neighbours	50
3	Private fruit trees	50
4	Impact of private trees on remnant vegetation	50
5	Trees on strata or company title properties	50
6	Private trees overhanging Council property	51
7	Tree planting on private land	51
Chapter 5	Trees in development	52
1	Protecting trees through development and assessment controls	53
2	Policing approved landscape plans	57
Chapter 6	Trees as heritage	59
1	Protection and recognition	60
2	Heritage listed trees	62
3	Procedures for listing	63
Glossary of Terms	67
References	70



Introduction



Trees perform many functions. Culturally, they contribute to the character of an area and add a sense of life and place. They instil a sense of community pride in residents and can even calm and inspire. Environmentally, they provide natural air conditioning, shade, habitat for native wildlife, soil restoration and shelter against noise and wind. Aesthetically, they add natural beauty and provide a necessary softening of the built environment.

The Waverley Council Tree Management Plan (TMP) has been prepared to provide a framework for the management of all trees within the Waverley Local Government Area for the next ten years, with a proposed review in five years' time. It was prepared after a comprehensive study of the key issues relating to tree management in the area and followed a period of consultation with the community in 2004.

During preparation of the TMP the community was invited to comment on tree management in the area through a series of community meetings and forums. People were encouraged to think about why trees are important to them and how trees can be managed into the future.

It soon became clear that most people share a common vision to see as much tree canopy cover as possible, within the usual constraints of amenity and with regard to the potential hazard to services.

This important common vision consequently informs all of the principles, policies, strategies and actions contained in this Plan. The actions also correspond with those in the *Waverley Together Strategic Plan* and *Council's Management Plan*.

The aims of the Tree Management Plan are to:

- identify and address all major issues relating to tree management on both public and private land in the Waverley LGA
- reflect current 'best practice' in tree management
- meet Council and community expectations
- provide a clear and consistent framework for both residents and Council staff to ensure the effective, and coordinated management of trees in the area.

For the purposes of this Plan a tree is defined as a single-trunk plant that:

- is at least four metres high, or
- has a canopy spread of four metres or over, or
- has a trunk width of 300 millimetres or over when measured at one metre above ground level, or
- is listed on the Waverley Council's *Register of Significant Trees*.



To help guide the reader the TMP is divided into three main sections:

- **Volume one** is the 'body' of the strategy and identifies the key issues, principles and policies, strategies and actions concerning tree management in Waverley LGA.
- **Volume two, the Appendix**, contains the reference list and tree species list as well as details of other, relevant Council documents.
- **The Action Plan** provides a quick reference, together with priorities and responsibilities, to the activities that will be carried out under the TMP. This will be updated over time and reported separately to Council.

If you would like to find out Council's policy on a particular tree matter, first decide where the tree is found—ie. street, park, backyard, development site—and decide whether or not it is a significant/heritage tree (check Council's *Register of Significant Trees* on our website if unsure). Navigate through the contents page in this volume to find the chapter most relevant to your query and then decide which section best fits your needs.

If you are uncertain about what to do, or require further advice about this policy, please contact our Strategic Tree Planning Officer on 9369 8000. For additional information about trees and details on procedures, visit our website at www.waverley.nsw.gov.au.



Chapter 1

Key Local Issues



The community consultation carried out by Council as part of the development of this Plan included community meetings and consultation sessions with residents, Council staff, Councillors, members of the Bondi and Basin Chamber of Commerce, and staff from the NSW Heritage Office and neighbouring Randwick and Woollahra Councils.

As part of these consultations it emerged that trees are valued because they:

- add character to precincts
- protect the environment
- provide natural air conditioning
- maintain important habitats, particularly for native birds
- offer shade
- soften development and infrastructure
- add life to streets
- instil a sense of pride in a place
- calm and inspire
- improve air quality
- reduce noise and wind
- improve the soil (chemically and physically).

A number of issues relating to tree management in the area also emerged and these are examined in further detail below. A series of strategies and actions have also been included and incorporate the feedback obtained from a wide range of sources:

1 Urban forest and canopy cover

In its *2003 Urban Forest Policy* the NSW Local Government Association defines urban forest as “the totality of trees and shrubs on all public and private land in and around urban areas, including bushland, parkland, garden and street trees, and is measured as a canopy cover percentage of the total area” (Local Government Association of NSW, 2003).

Strong feedback was received from the community that there should be an increase in the canopy cover in the Waverley Council area as: “trees provide relief from the concrete jungle”, “trees are food for the soul” and because Waverley should be “as green as Woollahra”.



1.1 INCREASE THE PERCENTAGE OF CANOPY COVER

American Forests (2004) recommends the following canopy percentages for the less dry eastern side of the United States:

- average tree cover counting all zones: 40 per cent
- suburban residential zones: 50 per cent
- urban residential zones: 25 per cent
- central business districts: 15 per cent.

The current percentage of canopy cover in Waverley is yet to be determined, and more detailed analysis of what percentage is private, public, park and institutional will follow. Council may set targets for percentage of canopy cover or may instead determine a percentage increase of the current level of cover.

By this method, the policy of increasing annual tree planting numbers will be consistent and methodical. Further research needs to be undertaken to establish the appropriate percentage of canopy cover as well as to determine the feasibility of such targets within the constraints of Council's current and projected resources.

However, it is important that canopy cover percentages are not used by individual developers to argue that no trees are required on specific sites.

While canopy cover percentages are targets to assist in more detailed planning of land use in Waverley, they should not become a benchmark by which individual developments are judged as having fulfilled or not fulfilled the required zone percentage canopy cover, especially in relation to nearby public open space. For example, it might be argued that the local area of a site has more than met its target percentage of canopy cover, and so no trees are required on the subject site. This would clearly be an inappropriate use of the targets.



Image 1: Excellent canopy cover in a Waverley street

STRATEGY

Ensure that optimal target percentage canopy covers form an important and fundamental part of strategic planning for tree planting in Waverley.

ACTIONS

- Assess current level of tree canopy cover in the Waverley LGA.
- Identify demand, opportunities and constraints for increased tree planting.
- Investigate possible canopy cover target percentages.

1.2 RESOURCES FOR INCREASING CANOPY COVER

Increasing canopy cover should not compromise the current level of tree maintenance. The increase in canopy cover requires a number of actions including planting additional trees in streets, replacing old and dangerous trees as they are removed, maintaining an increased tree resource and investigating possible changes to requirements for site coverage by trees in development applications.

STRATEGY

Prepare a masterplan to guide future planning for tree planting across the Waverley LGA and target percentage canopy covers as integral components of strategic tree planting in Waverley.

ACTIONS

- Analyse and identify landscape character zones within Waverley.
- Identify a regional network of wildlife corridors and habitat locations for integration in the Greening Masterplan in consultation with other LGAs and with reference to Green Web Sydney.
- Coordinate with other relevant strategies and plans, including the Waverley Transportation Policy, the Green Links pedestrian network, Town Centre plans, draft Gap Analysis on Sustainability and adopted Plans of Management.
- Prepare a masterplan to guide future planning for tree planting across Waverley to achieve proposed canopy cover. The document should be used as a first-step tool for planning Council tree planting initiatives and to provide tree planting advice to developers and private landowners.
- Identify trees with a Safe Useful Life Expectancy (SULE) of five years or less and assess on an individual basis for possible replacement.
- Investigate a system of ordering required species well in advance of need.
- Provide additional staff and resources to replace aged and dangerous trees and to fund the ongoing maintenance of additional tree planting.
- Investigate using funds from the Environment (Green Asset) Levy and other sources of government funding.

2 Tree selection

2.1 NATIVE VERSUS EXOTIC

The Triassic Hawkesbury Sandstone of the Waverley LGA has traditionally supported Coastal Sandstone Heath, Sydney Sandstone Ridgetop Woodland and small areas of Sydney Sandstone Gully Forest (Green Web Sydney, 2004).

Being so close to Sydney, the area was quickly settled and the onset of agriculture, manufacturing and a greater density of residential use meant that almost all of the remaining vegetation was swept away. Today, just 0.6 per cent of total land area remains. Only eight significant examples of local indigenous vegetation remain in Waverley; these are scattered along the coastline but do not form a continuous corridor.

European settlement introduced a variety of exotic trees, as well as some Australian species that had not previously been found in the area. Some, such as *Ficus 'Hillii'* (Hills Fig) and *Phoenix canariensis* (Canary Island Date Palm) are of cultural significance but others, like the *Cinnamomum camphora* (Camphor Laurel), are now regarded as weeds because of their invasive effect on local indigenous species.

In Waverley today, the majority of trees currently selected for public planting are 'native' with a small percentage of deciduous exotic trees chosen to allow for solar-access to narrow-fronted properties. A minimum of 200 new street trees are planted each year and nature strip trees can be planted, free of charge, at the request of residents and the discretion of Council (matched against either a proposed species or Council's list of preferred species).



However there are differing opinions within the community about the range of tree species suitable for Waverley and whether exotic species should be planted at all. In July 2002 Council adopted a policy that all future public domain planting—including streets, parks and reserves—should comprise ‘native’ species and wherever possible locally-indigenous species.

Native plants are seen as preferable largely for environmental reasons (habitat, water retention in upper catchment, drought tolerant, often less maintenance, better soil stabilisation) and because of their contribution to developing a local landscape character/identity that is authentically Australian. Moreover, the *Waverley Local Environment Plan 1996* stipulates that planting native trees and shrubs should be encouraged.

Nonetheless, it was also recognised that on occasions exotic trees may be the only suitable choice in particular planting situations and that the planting policy should, “incorporate a degree of flexibility in relation to planting non-indigenous and sometimes deciduous species in identified selected areas—especially in heritage areas, commercial zones and in instances where issues of solar access need to be considered”.



Image 2: The Coastal Banksia (Banksia integrifolia) is a locally indigenous species well suited to most street and private sites in Waverley.

2.2 WHAT IS A NATIVE TREE?

The definition of a native tree species is generally interpreted as one that would have been growing in Waverley at the time of European settlement. However, it is also interpreted as:

- endemic (in other words, found only in this specific location)
- locally indigenous (found in Waverley prior to European settlement but can be extended to include Sydney’s eastern suburbs)
- native (broadly found in Australia).

The first definition technically excludes any species that is found outside the Waverley area, which is plainly not practicable; while the third would include species from such places as tropical and Mediterranean climates that could out-compete locally indigenous species. The second definition is therefore the most useful since it includes a range of species that are likely to grow in Waverley. However, it is important to note that many people urge a less purist approach because the local soil conditions and microclimate have been changed by successive years of human intervention. Moreover, regional trees of a different genus would not threaten the gene pool of a more local species.

2.3 ENCOURAGING LOCALLY INDIGENOUS TREE STOCK

As noted earlier locally indigenous species are environmentally valuable and contribute to an ‘authentic’ local character. Council may consider the following suggestions to promote locally indigenous planting:

- identify appropriate locally indigenous tree species, as outlined in the Planting List located in the Appendix

- provide locally indigenous tree species through forward planning and providing tube stock of less common Sydney species
- investigate whether it is possible to cultivate locally indigenous shrubs (commonly multi-stemmed and four metres in height) as street and park trees through pruning during early growth
- promote locally indigenous tree species to residents through Council's annual Free Tree Program
- consider the totemic value of trees to the indigenous community. There is a connection here with the traditional values placed on trees by ethnic communities
- develop an education program for residents and Council staff to accompany the above approach. For example, expand the Gardening with Native Plants workshops where required
- favour locally indigenous tree species in all Development Control Plans, Plans of Management and Strategic Plans
- consider other selection factors when choosing locally indigenous tree species such as the value of preserving local identity and character or ensuring adequate solar access. Apart from Bushcare work, local seed stock could be replaced with species found still within the eastern suburbs but of a different genus.

STRATEGY

Carry out a program to encourage the use of locally indigenous tree species in Waverley.

ACTIONS

- Adopt a performance-based approach to tree species selection described in this TMP and outlined in the Appendix, especially recommendations for street and park trees.
- Replace all current plant species lists used by Council with a new brochure incorporating the master species list and the performance matrix included in this TMP.
- Ensure that the brochure incorporating the master species list and performance-based matrix is the principal tool used for the selection of tree species in Waverley.
- Conduct regular workshops with relevant Council personnel to ensure a thorough understanding of the procedures included in this TMP and general best practice in management of Waverley's trees.
- Adopt procedures for promoting locally indigenous tree species in relation to working with nurseries, Council's annual free tree program, and favouring locally indigenous tree species and locally provenanced seed stock in all DCPs, Plans of Management and strategic plans.



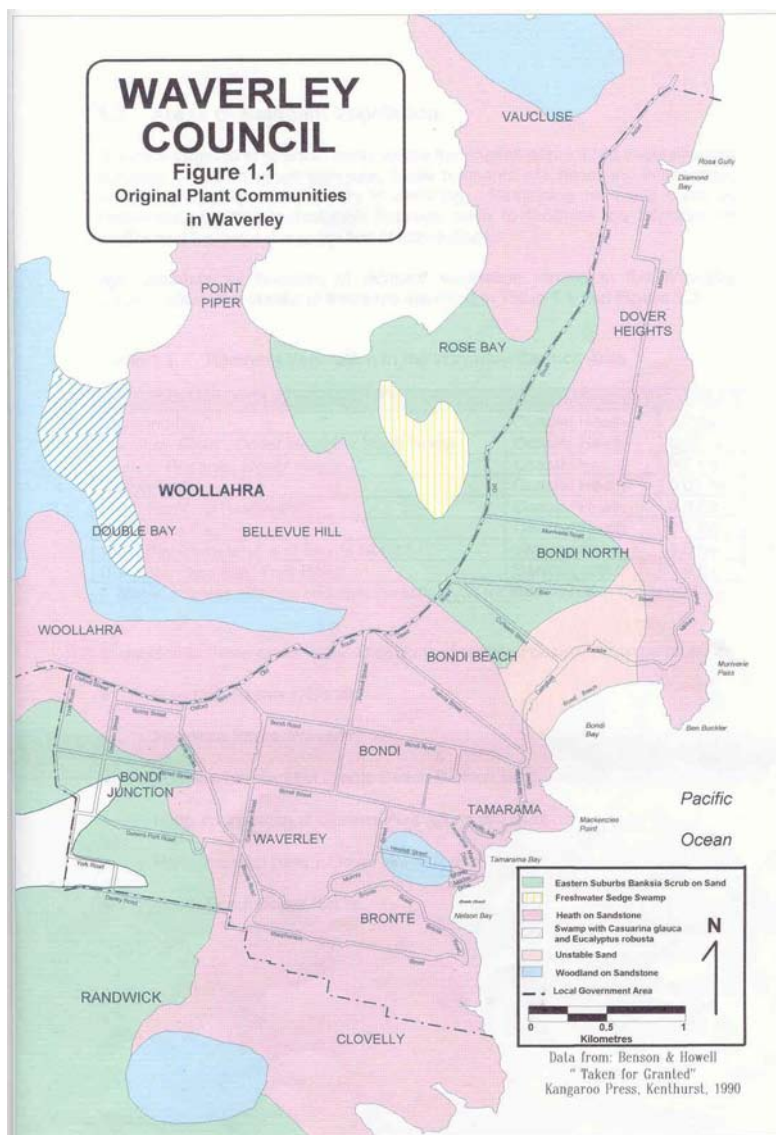


Image 3: Original plant communities in the Waverley Council area (Benson and Howell, 1990).

2.2 TREE PLANTING TO REFLECT LOCAL CHARACTER

It is important that the selection and maintenance of trees contribute to and support the local character of a particular site. In certain streets an avenue of trees may help to define and enhance existing heritage, environmental and architectural features.

Any tree planting carried out by local residents without consultation with Council may be well meant but could unintentionally create problems with regard to sight lines for drivers and pedestrians, inconsistency of landscape, damage to Council and/or private property, public liability claims or the added difficulty of ongoing maintenance.



Image 4: This Bracelet Honey-Myrtle is locally indigenous but has a short lifespan.

Trees planted on Council property become Council responsibility and the legacy of such tree problems may not be fully evident for up to 10 to 15 years. Council therefore has the right to remove illegal and inappropriately planted trees. For that reason any residents who want to plant trees in their own street are strongly encouraged to discuss their plans with Council staff first so that chosen trees are consistent with the existing streetscape and street tree plan.

STRATEGY

Ensure that local character is a determinant when selecting tree species for planting in Waverley.

ACTIONS

- Analyse and identify landscape character zones within Waverley.
- Consider the benefits of planting avenues of trees in certain streets to enhance character and place.

3 Trees and views

Many residential suburbs of Waverley enjoy beautiful views of the ocean, Sydney Harbour and the city. Obscuring these views by trees on public or private land can be an issue of some controversy in Waverley.

Council's current policy is not to permit the trimming, pruning, lopping or removal of trees in response to loss of views. 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 where possible species will be selected and placed to frame and complement views.



Image 5: A tree may be considered an obstacle to views, a natural frame, or integral to the view itself.

STRATEGY

Prepare and adopt a clear policy to address the issue of trees on public and private land and access to views.

ACTIONS

- Investigate and improve the procedure for addressing requests for tree work in response to its impact on views.
- Improve consultation procedures when groups of trees are planted.



4 Tree vandalism

Vandalism of public and private trees not only affects adjacent neighbours but also whole streets and blocks; the wider community also suffers through the gradual attrition of mature trees from the urban landscape. Council presently responds to incidents of tree vandalism by:

- investigating all reports and gathering information
- sending notification letters to residents requesting further information
- erecting signs in streets and parks highlighting the damage
- publicising significant and blatant attacks through local newspapers
- prosecuting through the courts wherever possible.

STRATEGY

Formulate a comprehensive policy for responding to vandalism of trees.

ACTIONS

- Improve methods of educating and informing the public about the benefits of trees.
- Outline measures for responding to incidents of vandalism.
- Examine ways of increasing powers of rangers to investigate vandalism attacks.

5 Effectiveness of the Tree Preservation Order

The Tree Preservation Order applies to both public and private trees and protects trees from “ring barking, cutting down, topping, lopping, removal, injury or wilful destruction of any tree or trees specified in the order except with the consent of the council and any such consent may be given subject to such conditions as the council sees fit”. (Clause 8 Environmental Protection and Assessment Model Provisions, 1980)

However, attacks on trees still occur. Council must consider how effectively it currently uses its TPO to prevent unlawful actions with regard to trees or to prosecute breaches. Council needs to consider what measures can be taken to highlight this problem and encourage compliance and cooperation from the public and a better understanding of the importance of trees to the community.

5.1 INCLUSION OF THE TREE PRESERVATION ORDER AS A SCHEDULE TO THE LOCAL ENVIRONMENTAL PLAN

An investigation of seven councils within the Sydney area reveals that while all refer directly to the Tree Preservation Order within their Local Environment Plan (LEPs) none include it in full as a schedule, which would have the advantage of making it more clearly visible to the public. A potential disadvantage is that any change requires an amendment to the LEP, although this could be circumvented if the TPO is worded in strict accordance with the *Environmental Protection and Assessment Model Provisions 1980*.

To incorporate the TPO more fully into Waverley’s planning scheme and to make it as accessible as possible (notwithstanding that inclusion in full does not appear to be common practice among Sydney councils generally) it should be included as a schedule to the Waverley LEP once legal advice is obtained to verify any legal implications.

STRATEGY

Maximise the effectiveness of the Tree Preservation Order to protect trees.

ACTIONS

- Investigate methods to improve the effectiveness of Council's Tree Preservation Order.
- Improve communication and education of the public of the TPO.
- Consider introducing on-the-spot fines for minor breaches.
- Investigate including the TPO as a schedule to the Local Environment Plan.



Image 6: The sand-dune nature of Bondi, indicates the extent to which human intervention can impose suitable plant communities on previously inhospitable sites. (Photo courtesy Mitchell Library, State Library of NSW)

6 Habitat networks

Waverley's green spaces provide habitats for a variety of native animals including Blue Wrens, Honeyeaters, Lorikeets, Common Brushtail Possums and Bluetongue Lizards as well as insectivorous bats, geckos, and frogs.

A Wildlife Habitat Corridor Study (Ondinea, 1996) conducted for the Waverley LGA identified areas of significant wildlife habitat in and around Waverley and looked at whether green 'corridors' could be established to help wildlife move safely from one area of vegetation to another.





Image 7

Example of Iron Cove corridor plan from Green Web Sydney (courtesy Leichhardt Council).

Waverley Council also supports the proposed Green Web Sydney habitat corridor system, a joint initiative of the Sydney Regional Organisation of Councils (SROCs) to develop an overall vegetation management plan for Sydney. The aim of Green Web Sydney is to establish habitat corridors that link fragmented patches of bushland thereby helping migration of wildlife and the natural dispersal of native plants. This project also suggests policies and planning strategies to enable local councils to ensure biodiversity conservation throughout Sydney.

Achieving biodiversity is one of the major aims of Council's TMP and one way of achieving this is to create a linking network of green corridors within the Woollahra, Waverley, Randwick and Botany LGAs. For example, Centennial Park, Moore Park and Queens Park are habitats that can be linked to remnant vegetation sites near the coast in neighbouring Randwick and Woollahra Councils. Council may consider mapping and planning additional sites to create viable corridors either within Waverley or the broader area.

When it comes to tree management in Waverley, part of the selection criteria for existing and proposed trees will involve assessing the contribution they make to local biodiversity and maintaining habitat corridors within and beyond the boundaries of the Waverley LGA. A range of tree species will in turn support a greater variety of native fauna, as will planting trees in parks and private properties that are a different species from those planted in streets.

STRATEGY

Ensure that wildlife corridors and habitats are determinants in the development of a masterplan for tree planting in Waverley.

ACTIONS

- Identify, in consultation with surrounding Local Government authorities and with reference to the Green Web Sydney plan, a regional network of wildlife corridors and habitat locations for integration in the Greening Masterplan.
- Appoint a dedicated Council officer to manage the integration of all tree management.
- Ensure Council's operational staff are fully conversant with techniques for managing both remnant vegetation and Council land adjacent to patches of it in Waverley LGA.
- Manage remnant vegetation and contribute to its rehabilitation and conservation.
- Create habitat corridors that are as short and wide as possible, allowing for the movement of wildlife between areas of significant habitat.
- Ensure habitat corridors relate to Centennial, Moore and Queens Parks and to remnant Bushcare sites.
- Consider all possible habitats, including schools, small streets, parks and private land.

7 Pedestrian links

Council is also committed to providing easy-to-access 'green links' for pedestrians as well as for native fauna. Our GreenLinks project will improve accessibility in and around Waverley by developing pedestrian links between large areas of open space such as parks, beaches, schools and commercial centres. It proposes that pedestrian routes be shaded and avoid roads where possible. These links will be green, clean, safe and promote a sense of wellbeing within the community by encouraging people to walk rather than rely on cars for short trips.

The role of tree management within this project is to:

- integrate tree planting with existing and planned pedestrian corridors, travel-to-school links and public transit corridors and facilities
- integrate tree planting with regional and sub-regional bicycle routes—current and planned
- balance traffic calming with the personal safety of tree maintenance staff
- avoid obstructions to bus stops
- encourage the use of backyard fruit trees along private lanes.

STRATEGY

Incorporate the approach in the Waverley Transportation Policy and the GreenLinks pedestrian network policy in the development of a Greening Masterplan for Waverley.

ACTIONS

As part of an overall Greening Masterplan, coordinate with all relevant Council strategies and policies including the Waverley Transportation Policy.



8 Ecologically Sustainable Development

Ecologically Sustainable Development (ESD) is a highly regarded principle in Waverley and Council has initiated a two-part project that will integrate the principles of ESD into its built form planning instruments. Council's report *Waverley Council's Built Form Planning Instruments: A Gap Analysis* recommends improving and protecting trees and promoting locally indigenous species, except when in conflict with solar access.

Suggestions that Council should consider planting native plant food trees in streets for public consumption need to be balanced against the potential for such trees to create public liability issues. Another proposal is to encourage fruit trees such as citrus and pecan to be planted on private land, especially along green link lanes.

STRATEGY

Incorporate ESD principles in tree species selection, planting policy and in preparation of the Greening Masterplan.

ACTIONS

- Investigate the use and performance of locally indigenous trees.
- Identify possible areas for planting fruit trees i.e. parks and GreenLinks corridors.
- Investigate providing compost for park trees through measures such as Council collection of tree waste.

9 Public tree removal

Public tree removal is an inevitable and necessary management strategy when a tree has reached or is approaching over-maturity or when it poses a high risk of damage or personal injury to the community.

The decision to remove a tree should be based on whether the tree:

- is in poor health and remedial work has been unsuccessful or ineffectual
- is considered potentially dangerous or in danger of falling
- exposes Council to significant ongoing costs in relation to claims for personal or property damage
- has caused damage to infrastructure such as roads, footpaths, services and drains, and where remedial measures and repair works may affect the health of a tree or not guarantee a permanent solution to the problem
- is of a species identified as problematic because it is a recognised public health issue and is not listed on the Heritage Register or Council's *Register of Significant Trees*.

Removal may also be considered in circumstances where tree removal and replacement has been recommended in a landscape or development application or plan of management.

10 Communication

Communications within Council and with the public are steadily improving, however, there are areas that require further improvement, particularly the notification process for public tree pruning or removal.

As noted in Council's *Waverley Tree Planting and Protection Plan* discussion paper: "The removal of a mature tree from a street can have significant effects in relation to the visual and environmental amenity of the street. Therefore it is understandable that this may be of great significance and concern to affected residents. In many cases residents may de-

velop a strong sense of ‘ownership’ of their street trees and therefore Council must aim to keep residents fully informed in relation to proposed tree removal. To date there has been no set procedure in this regard, with notification being undertaken on a relatively ad hoc basis”. (p.15)

10.1 NOTIFICATION AND RESPONSE FOR PUBLIC TREE WORK

Any request to undertake work on a public tree is sent to Council’s Tree Operation Supervisor for initial assessment. Any request for work on a tree in a park or reserve must come from the Divisional Manager Operations or Divisional Manager Integrated Planning. If the request involves the possible removal of a tree/s it is also referred to Council’s Tree Management Officer for further assessment as to whether a permit under the Tree Preservation Order is required.

If removal of tree/s is considered necessary, a process of public notification and community consultation is followed:

- A letter is sent to all affected residents about the proposed work. The letter is to clearly state the location and species of the tree; the reasons for the proposed work; the replacement species (where possible) and a contact name and number. A notification tape stating the tree is under review is also attached to the affected tree/s.
- If there is a proposal to remove more than two trees, or if a tree is considered prominent/significant or its removal is likely to cause substantial community concern, all Councillors will be notified.
- If the proposal is for the removal of multiple trees, a tree listed on Council’s *Significant Tree Register* or a tree within a Conservation area all Councillors and the relevant precinct Committee will be notified.
- Notification will occur for a minimum of two weeks prior to the proposed works except if the tree is hazardous and in immediate danger of collapsing. At the end of this period an assessment will be made of the responses received and the appropriate council officer will make a decision on the procedure of works. If removal is recommended a notification sign and tape will then be attached to the tree/s stating the reason for removal and the replacement species (where possible).

A similar notification process will be followed when planting multiple trees in a street or park or for large scale tree pruning (other than maintenance pruning) or for the pruning of significant trees.

STRATEGY

Ensure the community is well informed about works on trees and tree removal.

ACTIONS

- Develop a detailed procedure for public notification to cover all levels of works associated with trees.
- Publicise intended work on trees as widely as possible.

10.2 COMMUNICATE MANAGEMENT IMPLICATIONS TO COUNCIL STAFF

Council staff will be fully informed of the implications for tree management arising from Council controls. As tree policy becomes translated into amendments to the 1996 Waverley LEP and to new or revised Development Control Plans and Plans of Management, responsibility needs to be taken to ensure that all changes are explained to relevant Council staff such as Development Application staff, Recreation, Customer and Community Services staff and operational staff.

As well, there needs to be periodic monitoring of all actions Council takes in relation to trees to ensure full understanding of all tree policies.



STRATEGY

Implement a program of staff training and regular staff consultations to ensure best practice in tree management.

ACTIONS

Conduct regular workshops with relevant Council personnel to ensure all changes to Council controls are clearly understood by all staff.

10.3 OPTIMISE PUBLIC AWARENESS OF THE VALUE AND CARE OF TREES

To improve the recognition and importance of trees in the community, Council should promote public awareness of the value and care of trees by:

- producing education material and brochures that explain the benefits of trees
- increasing the amount of information about trees on Council's website to include selection, soil, planting etc
- highlighting the positive contribution of trees in Council's community courses
- planning a 'Tree Week' involving schools and Council officials
- developing a display of a locally indigenous garden on Council land; or
- educating property agents regarding the value of trees

STRATEGY

Implement a public education and awareness program regarding the value of trees in Waverley.

ACTIONS

Adopt a series of initiatives as outlined above.

11 Planning controls

It is important to improve compliance with non-statutory planning controls relating to tree management by providing a formal referral process to ensure non-statutory controls are consulted. Tree protection and planting needs to be comprehensively addressed in Council's planning controls. This will assist in dealing with a perceived lack of transparency on public/developer responsibilities regarding trees in the environment.

To improve this situation, amendments are required to the Waverley Local Environment Plan 1996 to acknowledge the value and importance of trees to the Waverley area.



STRATEGY

Amend Council controls to reflect the economic, environmental and cultural values of trees.

ACTIONS

- Amend Section 4(l) on Environmental Protection Specific Aim within the Waverley Local Environment plan to read: "To improve the local environment by protecting existing trees and encouraging the planting of trees and shrubs native to the area, whilst acknowledging the economic and cultural value of certain other trees and shrubs."
- Review Development Control Plans to ensure consistent controls across all relevant plans with regard to the retention, protection and planting of trees.
- Develop an integrated set of landscape and tree criteria for development assessments.
- Incorporate guidelines on trees, landscaping, setbacks from trees, site coverage etc into Development Assessment applications.
- Adopt a recommended species-planting list.

12 Greening Masterplan

A masterplan of planting throughout Waverley should be coordinated to integrate economic, cultural and environmental criteria. This would involve a masterplan of street trees linking to all local strategic plans, Residential Character Studies and Plans of Management.

This masterplan will help to create locally appropriate landscape character zones. This planting list could also be extended to incorporate understorey plants.

Eventually an overall planting matrix will be produced covering site tolerance, soil types, locally indigenous species, mature height/width and a number of other characteristics.

Some broader issues that may also need to be considered:

- relation of new species to the aesthetic form of existing species
- the requirements of indigenous fauna
- the potential of certain plant species to attract or discourage unwanted predators
- potential for allergy production
- potential for enhancing character and place through the use of avenues of trees.

STRATEGY

Prepare an integrated Greening Masterplan.

ACTIONS

- Ensure the Greening Masterplan of planting throughout Waverley LGA coordinates with other relevant Council strategies and policies.
- Conduct consultation sessions of the masterplan with relevant staff, followed by discussion with precinct committees, community consultation and education.
- Adopt a performance-based approach to species selection.
- Integrate the masterplan with Green Web Sydney habitat corridors.
- Replace all current plant species lists used by Council.
- Forward plan with nurseries to ensure adequate supply of preferred tree species.



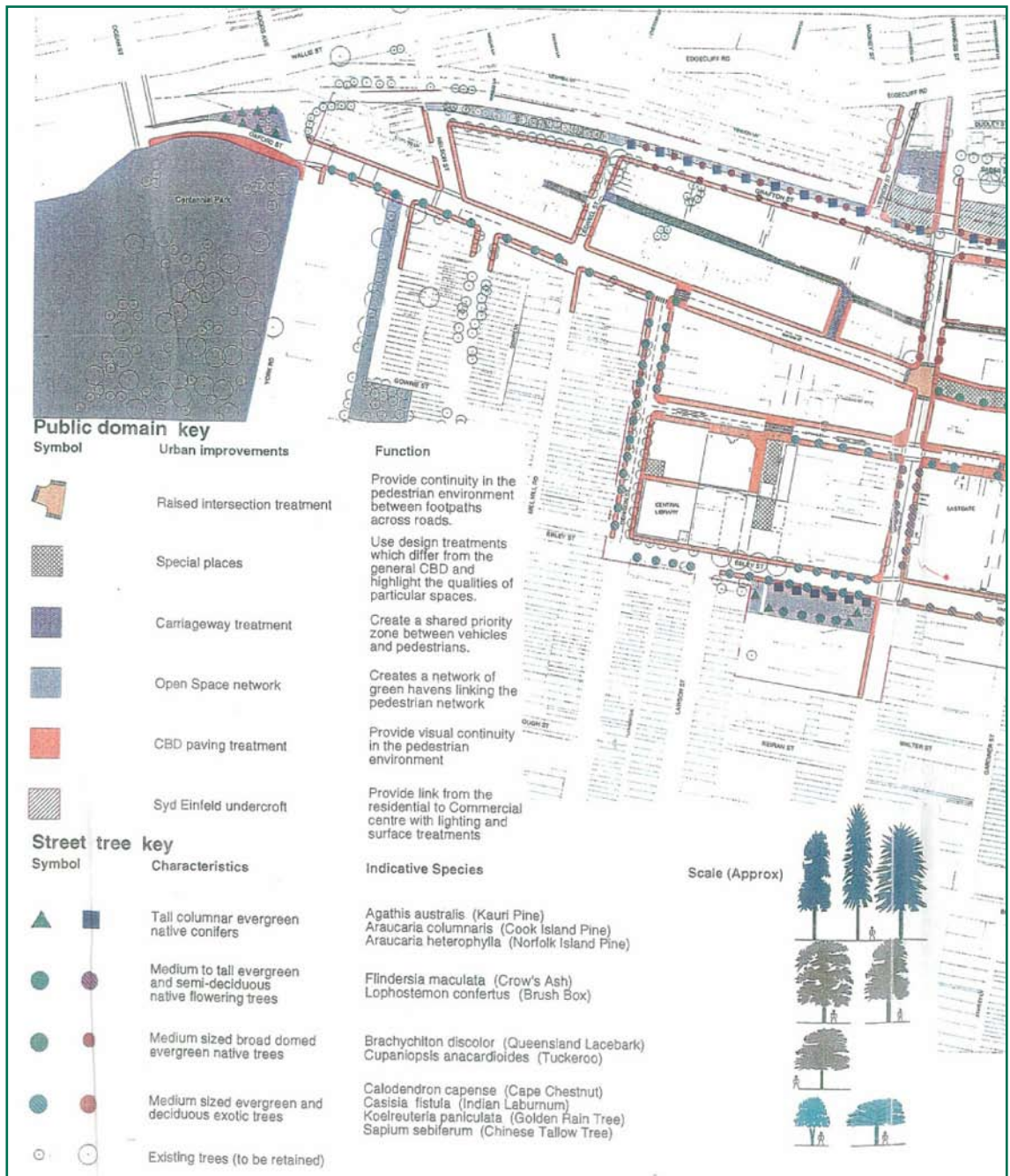


Image 8: Public domain tree planting as mapped in the Design Framework for Bondi Junction.

Chapter 2

Trees in streets



Street trees are planted along road reserves and verges, laneways and occasionally foot-paths and in the road itself; they are usually chosen for their shade and visual appeal.

Consultations carried out with Council staff and Councillors, Waverley residents and other stakeholders indicate that street trees are valued because they provide:

- attractive, green spaces
- softening of the streetscape
- habitat corridors for local fauna
- shade
- urban forest
- regulation of the water table
- flood amelioration
- soil conservation
- microclimate moderation
- uniformity of streetscapes
- biological diversity.

There are several key issues involving placement and planting of trees in streets. These are explored in more detail below and strategies and actions for each are outlined:

1 Public liability issues

According to Council statistics obtained between 1999 and 2003, trees account for approximately 16 per cent of Council's total liability claims, of which 61 per cent are 'slips, trips and falls' claims. Council's maintenance staff can spend as much as 40 per cent of their budget and most of their time responding to hazards caused by poorly placed street trees. There are many reasons for these claims, most of which involve street trees:

- invasive roots: roots versus pipes and other public infrastructure, private property such as walls, foundations and lifting of pavements causing trip hazards
- leaf and fruit drop can cause a slip hazard and block gross pollutant traps
- branches may drop causing damage to people or property.

1.1 DAMAGE CAUSED BY TREE ROOTS

Council can be held legally responsible for root damage that is 'reasonably foreseeable' and it is important that Council has a detailed knowledge of its tree resources through active updating and use of its street tree database.



One of the most important measures to prevent or at least mitigate problems caused by roots is careful street tree selection. Other points to consider include:

- root control barriers at time of planting
- retrospective root pruning and root control barriers
- underpinning of foundations
- water-tight, flexible service lines
- compaction rates of 95 per cent around service easements
- planting trees as far from below-ground services as possible.

Trees send out roots in all directions to exploit as much of the soil as possible. Soil near the surface is usually best suited to root growth, especially the top 500mm, and most tree roots are usually found here. Tree roots cannot grow in compacted soil such as heavy clay subsoils or heavily trafficked topsoils. Root control barriers direct the growth of roots down and away from the surface of the soil but for this strategy to be successful, the soil at depth must contain enough oxygen and moisture to sustain the roots.

There are many types of root control barriers available and a distinction should be made between the root control barrier with vertical ribs and the root control barrier that is flat. Studies have shown that the flat root control barrier can create root girdling and result in tree instability (Quambusch, 1996, p.19).

Root control barriers are best installed at the time of planting. There are two principal applications of root barrier, surround and linear. The surround application is more economical where the distance between street trees is greater than seven metres. The linear root barrier is more economical when planting groups of trees near each other, or when there is a maximum of two hardscapes that need protection (p.19). The linear application is commonly used in root pruning applications or when planting new trees in nature strips.

Root pruning of existing trees and the installation of root control barriers is an appropriate risk management strategy in some circumstances. A clear benefit of this strategy is that the tree, which might otherwise have been removed, can remain.

Root investigation is required prior to the installation of root control barriers adjacent to existing trees. A suitable method of investigation is root mapping, using a controlled water blasting technique. Root mapping can be used to determine the size and direction of root growth and to clarify whether the tree's roots are the true cause of damage to the target. The root map is analysed by an experienced arborist who can determine whether root pruning would be an appropriate and effective course of action and what distance the roots should be pruned from the trunk of the tree.

Root pruning may impair the anchorage of the tree to some extent and may not be suitable in all circumstances. Prior to carrying out root pruning, the Arborist may recommend that canopy thinning be carried out to reduce wind resistance. Due to the cost of installing root control barriers to existing trees, this risk management strategy would need to be prioritised across the LGA.

Tree roots can cause damage to the footings of buildings and fences by expanding or physically disrupting them because they can remove water from the soil and cause structures to settle (Fakes, 1992, p.27). Many assumptions are made about damage caused by tree roots without proper and conclusive



Image 9: Damage to kerb caused by a Hills Fig street tree.

investigation. If after investigation tree roots are found to have caused damage to buildings and fences, there are strategies that can be employed to remedy the situation:

- Tree removal is the first course of action but is not desirable for two reasons: Firstly, residents have said they would like more street trees not less in the LGA. Secondly, tree removal may reverse the water levels in the soil causing them to expand and lift shallow footings. This is especially apparent if the tree is older than the damaged building (Cameron, 1985) and in areas where there is more clay in the soil than in the Waverley LGA.
- Other strategies include underpinning the footing with an engineered concrete pad or protecting the footing by installing a root control barrier or by compacting the soil to 95 per cent near the house.



Image 10: Concrete kerb, gutter and footpath replaced with bitumen to minimise damage to tree roots

Council's current Drain Blockage Policy -adopted in 2003 - governs policy and procedure in the event of claims by residents that Council tree roots are causing a blockage of drains on private property (see Appendix). As in all matters of public liability Council requires the property owner to prove Council liability. Clear procedures are outlined for progressing remedial work and for claiming the cost of such work from Council (if not carried out by Council staff).

Remedial action on existing street trees should be taken to anticipate conflicts with public and private property and personal injury. Trees that create public liability problems are generally either dangerous or potentially dangerous, may be developing weak limbs, are about to fruit or else are at the end of their Safe Useful Life Expectancy (SULE).

To anticipate such problems, Council's Street Tree Database should anticipate street trees that are at the end of their SULE and/or are potentially dangerous. The database should be updated on an ongoing basis with reference made to the assessment criteria listed below.



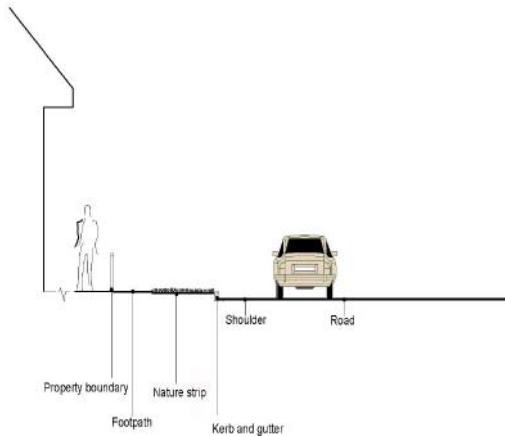


Image 11: Typical street features – definitions.

- The database should be regularly updated but with greater emphasis on more frequent inspection of trees identified as potentially hazardous or near the end of their lifespan.
- The SULE rating is a separate assessment to be undertaken as a once-off activity. Street trees that have reached the end of their SULE are to be replaced, before they become hazardous. Consider replacement planting in a position near the senescing dangerous tree.
- Council's Street Tree Database identifies trees reaching the end of their lifespan and suggest a time frame for replacement.
- Council's Street Tree Database is to keep and generate records related to costs of maintenance work as well as data related to

the costs incurred by individual trees, such as tree root problems.

- Resources to manage both the Database and consequent maintenance work are to be made available.
- Investigate the potential for a reduction in insurance claims where it can be demonstrated that Council's new proactive approach to public liability has reduced claims against Council.
- Council's funding structure for repairs and maintenance of street trees is to be investigated with other departments to allow for future planning and coordination.
- Guidelines regarding extent of reinstatement work required for landscape during hazard management are to be clarified, such as removing a dead tree and associated re-levelling and turfing works required.

STRATEGY

- Adopt the tree selection process indicated in Statewide’s Best Practice Manual, *Tree Selection Process* (Statewide is an advisory panel for the tree and insurance industries) and establish a list of options to address root control and damage to property and make it available to key personnel.
- Use the Waverley Street Tree Database as an active and informative planning tool for managing trees in Waverley.

ACTIONS

- Adopt the policy and procedures for claims for damage as provided in this TMP.
- Revise Council’s tree management guidelines so they are consistent with specifications for root guards and tree planting.
- Adopt the procedure for selection and placement of street trees as outlined in this TMP.
- Amend the current Waverley Street Tree Database criteria so that the data can be used to determine maintenance responses, identify new tree planting opportunities, find more suitable replacement species when tree replacement is required and apply standard arboricultural terminology.
- Progressively record the SULE rating of all trees in the age class ‘mature’ or ‘older mature’ in the Street Tree Database.
- Collect the results of the arboricultural inspection in the Street Tree Database and generate a rolling program of strategic maintenance works, including recommendations on tree planting, replacement and pruning.
- Progressively update the Street Tree Database.
- Establish a list of approved arborists and plumbers to carry out root control works on behalf of Council.

1.2 COUNCIL’S RISK ASSESSMENT POLICY AND PROCEDURES

Council will continue its current policy of requiring proof of property damage from the complainant. That is, where street trees are alleged to have damaged private property, Council’s policy is to require proof from the complainant in accordance with the legal principle of ‘innocent until proven guilty’.



STRATEGY

- Initiate the policy and procedures for claims for damage as provided in this TMP.
- Identify trees with a Safe Useful Life Expectancy (SULE) of five years or less and assess on an individual basis for possible replacement.
- Implement measures to ensure adequate community consultation regarding tree removal/replacement programs.

ACTIONS

- Implement the strategy for consideration of street tree removal, replacement and protection.
- Develop a strategy for regular and staged inspections of street trees to identify hazards and maintenance works based on identified risk zones.
- Ensure the inspection procedure is standardised, systematic and established in writing.
- Obtain independent legal advice regarding the implications for risk management of adoption of this TMP.
- Adopt the policy and procedures for claims for damage as provided in the TMP.
- Prepare written risk management procedures that are standardised and systematic. These strategies will explain the positive steps that Council will take to avoid or mitigate the risks posed by trees on public property, and how works will be prioritised to manage the risk.
- Report on insurance claims in accordance with advice from Council's insurer and Council adopted procedures.
- Assess the removal and replacement of trees that are not suitable for their location and for which risk minimisation strategies will not be successful. The planning process should be comprehensive and include community consultation with regard to all aspects of the removal and replacement works. Special consideration should be given to preserving Significant Trees.
- Compile and maintain a schedule of approved plumbers with agreed rates for insurance work to minimise the cost to Council of repair work.
- Revise Council's tree management guidelines to be consistent with specifications for root guards and tree planting.
- Adopt the policies of community involvement as outlined in this document.

2 Pruning for health and safety

Pruning is an effective way of eliminating a number of risks including low branches near footpaths and roads, structural defects such as dead braches or other limbs, storm damage, canopy thinning prior to root pruning works and sight lines clearances for signs, traffic lights and street lights. Tree pruning occurs for practical and health and safety reasons, not as a result of aesthetic or cultural delicacy.

STRATEGY

Ensure pruning practices are aimed principally at the overall health and vigour of the tree.

ACTIONS

- Revise Council's internal tree management guidelines so they are in line with *Australian Standard AS4373-1996 Pruning of Amenity Trees* and Occupational Health and Safety requirements. Address all aspects of maintenance including pruning, planting, watering, removal, fertilisation and weed prevention.
- Identify staff training requirements and implement a program of staff development.
- Encourage membership of professional arboricultural organisations so that Council remains up-to-date with developments in tree care and maintenance.

2.1 PRUNING FOR CLEARANCE OF ELECTRICITY WIRES

Many people in the community are dissatisfied with the way street trees are pruned to keep them clear of electricity wires. Over-pruning of street trees has in the past resulted in a scarred and ugly landscape and occasionally a loss of trees. Pruning under electricity cables to the minimum clearances is authorised under Section 48 of the *Electricity Supply Act 1995* which effectively overrules council-originated Tree Preservation Orders and other environmental planning instruments, but not State heritage or protection orders.

Pruning works within three metres of power lines can only be carried out by suitably qualified personnel and in Waverley's streets the safety clearance standards are:

- 1.5 metres from low voltage overhead mains, and
- 0.5 metres from low voltage overhead Aerial Bundled Cables (ABC).

These safety clearances have been determined to ensure reliability of power supplies and help prevent personal injury and damage to property. However, while EnergyAustralia does all it can to make sure that appropriate work practices are maintained and that contractual and environmental requirements are met, severe street pruning can result in an unsightly 'V' shaped canopy. For this reason Council has resolved to undertake as much as possible of the clearance pruning of our major tree-lined streets and to enter into contracts with Energy Australia to provide aerial bundle cabling of designated streets.

In 1991 EnergyAustralia, in partnership with local councils, introduced a subsidy scheme for Aerial Bundled Cable (ABC) which allows for reduced safety clearances thereby maintaining the appearance of the trees without compromising safety. ABC is an economically viable short-term solution that eliminates many of the problems associated with overhead cables. Several Councils, including Waverley, have installed ABC in select streets with very positive results. Waverley Council is already very advanced in its ABC program, focusing on streets containing trees



Image 12: Street tree pruning that is inappropriate – aesthetically and arboriculturally.



most likely to be affected by severe pruning methods.

At its 2001 annual conference the Local Government Association unanimously supported the relocation of existing above ground wires to below ground, within the Sydney Basin area. However, the relocation of above ground electricity wires has been estimated at costing between \$56,000 and \$80,000 per span by EnergyAustralia (or \$7000 to \$10,000 per customer) compared with approximately \$4000 per span for ABC (EnergyAustralia, 2002). The prohibitively high cost of replacing above ground wires with below ground cables means that very few Councils in Australia can pursue this option.

Additional strategies that could be used to reduce or eliminate the conflict between street trees and power lines, include:

- tree height selection
- directional pruning with species suitable for formative pruning
- 'pseudo' street trees
- engineering solutions.

2.2 TREE HEIGHT SELECTION

An effective way of minimising the conflict between tree canopies and overhead obstructions, such as power lines, is to select only those species that do not grow taller than the height of the power lines (usually between 6-8 metres high). This strategy is also advocated in EnergyAustralia's own Tree Safety Management Plan.

However, while this strategy addresses the functional aspects of tree management, it comes at the expense of the benefits of tree height and scale.

Limiting tree size to small trees across the LGA would not be particularly pleasing visually, although it could be a useful strategy for narrow streets.



Image 13: Street trees in Dover Heights – taller species on verge opposite powerlines.

2.3 DIRECTIONAL PRUNING

Some medium-sized trees (7-15 metres) can be trained to grow around overhead power lines and still look aesthetically pleasing. This strategy requires correct species selection and formative pruning when the tree is young. This method is used to best advantage when the safety clearances between the lines and the tree are minimal (see 'engineering solutions' below for more detail).

2.4 USING 'PSEUDO' STREET TREES AND ENGINEERING SOLUTIONS

A 'pseudo' street tree is one that grows next to, but not in, the road reserve or nature strip but still forms part of the overall streetscape (Draper, 1997, p.6). Such trees may be in the front garden of a private residence, in a park or school or along the perimeter boundary of commercial premises.

The benefit of 'pseudo' street trees is that they typically have more space to develop and are less likely to present a problem to overhead power lines. They may not be suitable for planting in road reserves, but can be used elsewhere to brighten up the treescape and provide variety. For successful planting of pseudo trees there must be effective communication with the community so that suitable species and locations are chosen and they are properly maintained.

A final engineering solution is to design roads and footpaths that provide more space for street tree planting in road shoulders or nature strips. Planting street trees on the road, possibly in dedicated planting spaces, is another possible solution to create shade and amenity while avoiding power lines. This may be considered where such planting does not compromise stormwater drainage, traffic flow or kerbside parking.

STRATEGY

Implement policies for height, directional pruning, identification of opportunities for 'pseudo' street trees, ABC works and relocation of services. Consider alternative solutions for street tree planting.

ACTIONS

Within the Greening Masterplan prepare a long term plan for reduction of conflicts between street trees and overhead power lines and achievement of a range of tree heights across the Council area through a combination of the following strategies:

- Small trees (<6 metres) in locations that permit street tree planting but are highly constrained
- Install Aerial Bundled Cabling in select streets and use medium (6-15 metres) to tall species (>15 metres) that can be formatively pruned
- Identify tree planting opportunities on public and private land for 'pseudo' street trees.
- Investigate relocating above-ground power lines to below-ground in established residential areas
- Identify areas suitable for large street or park tree planting within the LGA such as wide nature strips, broad medians, large roundabouts or other large areas of open space. Protect these in the Masterplan as areas for future forest scale tree planting.
- Lobby energy companies to improve their tree management practices.

2.5 LIAISING WITH SERVICE PROVIDERS

Council can investigate a system of forward planning and liaise with overhead and underground service companies working in the area with a view to coordinating tree removal with work undertaken by these utilities, thereby minimising disturbance to the verge. Relevant public utilities include Telstra, Optus, EnergyAustralia, Sydney Water and AGL.



Image 14: From Council's Tree Planting & Protection Plan.

STRATEGY

Coordinate forward planning for tree planting with service providers' work programs.

ACTIONS

Implement a strategy for forward planning by coordinating with the works programs of service providers that make use of the verge.



3 Managing new and replacement street trees

Some residents are concerned that replacement trees are not always planted within a reasonable time following removal of old or unsafe trees. Others are concerned that new street trees are not always planted at the right time or in the right place to optimise growth, particularly during drought conditions. The following recommendations will help promote successful establishment of new street trees:

- Council will create a Greening Masterplan that will incorporate but not be restricted to street trees
- water requirements and drought tolerance will be a decisive factor in species selection
- clear procedures will be adopted that address the issue of planting trees during a drought
- protective barriers will be installed during establishment period to deter vandals
- trees will be planted in wider holes and deeply mulched
- Council's new Civic Pride Program will encourage residents, school children and individuals to maintain newly-planted trees within their own streets.

3.1 STREET TREE REPLACEMENT

The commonly used urban trees of south-eastern Australia can have useful life spans of between 50 and 150 years, although street trees generally don't live as long as that because of their harsh environments. Few professionals, let alone the public, have ever witnessed the wholesale ageing and death of large numbers of trees in streets and parks because most of us are still living with the first crop of planted trees (Hitchmough, 1994, p.296). As a result decisions about street tree removal and replacement are some of the most difficult to make.

Why do street trees sometimes need to be removed? Usually when have become unsafe and the financial cost or time taken to maintain them outweighs their fading aesthetic appeal. Urban landscape managers have found that the visual appeal of trees increases as they age but falls away once they reach over-maturity. The cost of maintaining trees is high while they establish but declines as they mature; once they reach over-maturity they need increased monitoring and corrective works to keep them safe and attractive.

Of course some over-mature trees can be retained for anything up to ten years or more with additional management but this means that the opportunity to establish a new crop of trees during this time is lost. The same argument can be applied to trees that are not suited to their location and for which other risk management strategies like root control barriers are not successful.

Wherever possible the community should be consulted about tree removal and replacement works. If tree replacement is proposed it should occur as soon as possible after the removal works, or even before if site circumstances permit. Emergency tree removal is sometimes necessary and the short notice may preclude advance notification of the works to the community. In this case, information should be distributed to residents as soon as



Image 15: Locally indigenous street trees in Bondi Junction to soften building impacts and provide amenity.

practicable after the works to explain what has happened and what steps will be taken to replace the tree.

Phasing a tree removal and replacement program over time will help to reduce the trauma of mature tree loss and promote a variety of age classes in the overall tree population. It should be noted that the removal of every second or third tree has been trialed in the past without much success; the new trees struggle to compete for light, nutrients and water with the existing trees and their full growth can be compromised.

The cost of tree replacement programs can also be increased as a result of vandalism to trees in the early stages of growth. The number of trees in Council's care means that prompt replacement of vandalised trees is not always possible. Planting semi-mature stock and using hardwood tree stakes or tree guards can deter vandalism, although no tree guard can stop vandalism from occurring entirely. The recommended minimum size of replacement is 25 litres and larger stock should be used in highly visible areas such as around shopping centre or stations.

Promoting community involvement in tree replacement works and giving residents the opportunity to comment on replacement proposals will help foster a sense of community contribution and interest in the new trees and may help curb damage by vandals.

STRATEGY

Implement procedures to ensure informed species selection, best practice in tree planting and maintenance and general public support for tree planting programs.

ACTIONS

- Prepare a Greening Masterplan to guide future tree planting across the Waverley LGA to achieve the canopy covers proposed in the TMP.
- Review Council's current *Standard Conditions of Development Consent* to ensure consistency with this TMP and include the following condition: 'that developers install trees according to Council's Planting and Root Control Barrier Specification, prior to the release of the Occupation Certificate'.
- Improve record keeping of removed street trees to facilitate timely replacement.
- Impose conditions and bonds on development approvals to ensure adequate maintenance and proper establishment of new trees and landscape works generally on both public and private land (this will require Council inspection for compliance).
- Adopt the policies of community involvement in street tree management as outlined in this Plan.



4 Public consultation and notification

Whenever public trees require substantial pruning or removal, particularly if it will affect the visual appeal of streetscapes or adjacent properties, the following process is to be followed:

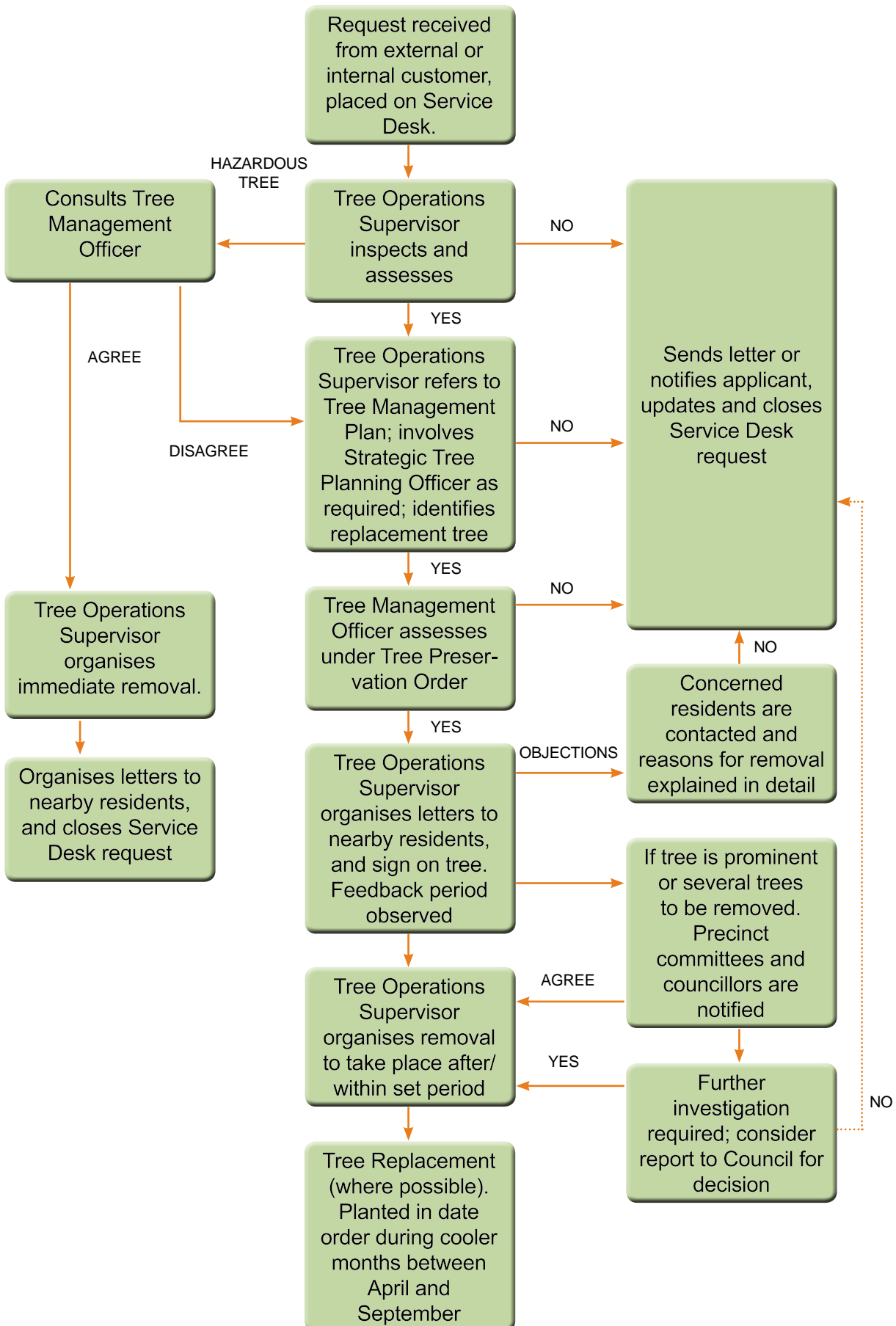
- Council's Tree Operation Supervisor will initially assess any request for work on public trees.
- If the request involves the possible removal of a tree/s it is also referred to Council's Tree Management Officer for assessment and issuing of a permit under the Tree Preservation Order.

The same process of public notification and response for public tree work as detailed in Chapter One will be followed. This same process will also apply to planting of multiple trees in a street or park and for large-scale tree pruning (other than maintenance pruning) or for pruning of significant trees.



Image 16: Acmena smithii (Lillypilly) is a locally indigenous street tree suited for wide verges or parks

Procedure For Removal Of Public Tree (Park or Street)



5 Tree species diversity and tree selection

There are differing views about the value of having just one species of tree planted in a single street. Some people think a more uniform approach adds to the visual appeal by creating a delightful 'avenue' of trees; others feel that varying the number of species provides greater biological diversity and contributes to the viability of native fauna habitats.

Street trees have the potential to soften the impact of development and inspire a sense of unity in the built environment. Community comments on street tree selection indicated that people would prefer to see a variety of tree heights and species across the LGA. Overall, consistency of one or two species within a street was preferred, although appropriate street tree species selection was also viewed as a key management issue.

Appropriate species selection is the most cost-effective way of reducing the potential for damage caused by trees in the built environment. Decisions about future tree species selection must be informed by the lessons learnt from past tree planting, particularly with regard to inappropriate species selection and the conflict between mature trees and the built elements within their immediate environment. Problematic trees that cause significant damage, such as *Ficus hillii*, should only be considered in streets identified as landscape heritage items.

In considering species selection site conditions criteria should include:

- width of planting opportunity on nature strip, tree planting square, road shoulder or median strip
- soil depth and type
- relationship to compass points for shade and sun
- existing character or 'avenue of trees' in the street
- location with slow traffic or fast traffic; location of crossings and traffic lights
- overhead obstructions or constraints and underground services
- associated building types, such as hotels or schools
- 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
- feedback from community consultation.

Horticultural selection criteria should include:

- habit of growth
- physical form
- visibility around trunk and canopy
- pollution tolerance
- drought tolerance
- growth rate and longevity
- weed potential for urban bushland and private property
- maintenance/creation of habitat and promotion of species diversity
- tolerance of compacted soils with low aeration or poor drainage.

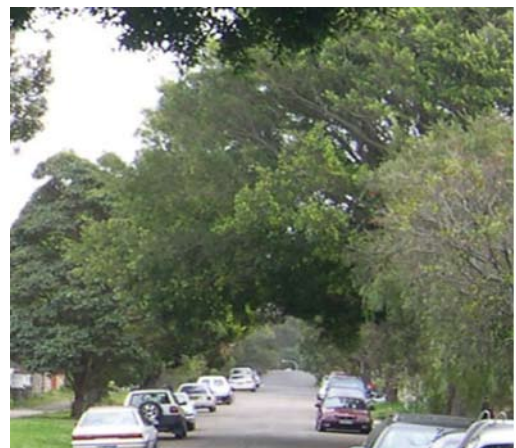


Image 17: Typical Waverley street trees, providing shade and softening the landscape.

- avoiding species with excessive leaf/fruit drop and invasive roots.

Changes to the Waverley Council Street Tree Database have 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 from the Street Tree Planting Species List. This list will be revised to ensure that it gives due consideration to the above criteria.

STRATEGY

Adopt a performance-based approach to street tree species selection incorporating all criteria listed in this TMP.

ACTIONS

- Develop and implement a procedure for selection and placement of trees incorporating criteria established in the Tree Management Plan.

6 Traffic issues

Vehicle traffic generates some issues relating to trees. For example, vehicle crossovers may require the removal of mature verge trees and in narrower streets larger vehicles damage tree branches. Planting of shrubs and trees on traffic control devices such as roundabouts can be visually appealing but may cause a threat to driver and pedestrian sight-lines and to Council’s maintenance staff.

Council can investigate alternatives to vehicle crossovers where they require removal of mature verge trees and promote street parking, plant street trees in line with property boundaries, relocate garages, reduce crossovers and investigate greater leniency in rules regarding street parking in areas of high population density.

Some form of signage can be placed in streets with extensive canopy to alert large vehicles to the risk of breaking branches of street trees, such as a stencilled sign on the roadway. The use of native shrub and tree planting on traffic control devices such as roundabouts is contingent upon the continued safety of Council’s maintenance staff. Council can investigate allocation of resources to provide better protection for newly planted street trees.

STRATEGY

Implement procedures and guidelines for protection of existing and future tree stock.

ACTIONS

Consider protection from vehicle damage when planning tree planting.

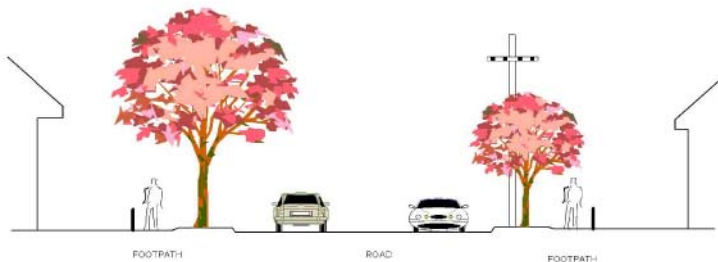


Image 18: A tall species and a smaller species can be planted in the same street, if site conditions permit



Chapter 3

Trees in parks



This chapter refers to all trees situated within Council's parks, reserves, publicly owned sportsgrounds and bushland and drainage reserves. It covers Council-owned land and Crown Land administered by Council. Trees in public open spaces are those planted within areas zoned as Open Space (7e), Local (7d), Regional & (6a) Recreational Existing. The parks in Waverley's public open space include:

- 'natural' areas (including bushland, wetland, foreshore, cliff-face and watercourse)
- sportsgrounds
- parks and reserves
- areas of general community use.

Through meetings and written communication it is evident that Council staff, Councillors, residents and other stakeholders value trees in parks because they provide:

- attractive surrounds and flora
- wildlife and bird habitats and corridors
- shade and shelter
- indigenous/cultural heritage
- playing space
- child and family-friendly space
- 'secret garden' experience in large parks
- clean air
- botanical education
- the opportunity to grow a wide variety of species and to grow larger species.

Some of the main issues concerning park trees are similar to those of street trees, namely views versus trees, species and seed selection, over-pruning, and integrating trees with pedestrian and habitat corridors. As these issues have been addressed in previous chapters they will not be revisited here. Issues relating specifically to trees in parks are addressed in detail below:

1 Maximise aesthetics and amenity in parks

Planting trees within open public spaces should improve the appearance of an area and contribute to its overall amenity. The design principles for trees in parks will be determined by Council's Landscape Architect and should maximise screening, shade, biological diversity and opportunities for surveillance and play (a list of recommended species is included in the Appendix).

Mature and significant trees can also define the character and usage of parks. To improve the recognition of the value of park trees Council should:

- amend the *Register of Significant Trees* to include trees of botanic and horticultural significance, such as remnant trees, those making a significant contribution to a flora and fauna habitat or corridor and those with unusual growth form
- identify trees with remnant vegetation communities to be placed on the register
- consider further action to protect remnant communities that do not contain trees
- ensure that tree maintenance matches the level and type of use of parks and reserves
- determine a hierarchy of maintenance of parks and reserves and target high-use sites
- ensure high-use parks and reserves receive a higher level of maintenance in general and of trees in particular
- provide opportunities for tall growing species in larger parks.



Image 19: An opportunity for a variety of taller species in Waverley Park.

In future design of open public space every attempt will be made to take advantage of existing trees and to incorporate indigenous species from local seed stock wherever possible.

2 Habitat corridors

Parks are an integral part of the network of wildlife and bird habitat and every opportunity should be taken to increase biodiversity within the LGA. Habitat corridors and patches have been identified in Woollahra Council's *State of the Environment Report 2002-03* and in the *Wildlife Habitat Corridor Study for Waverley Council* (Ondinea, 1996) and Council's *Remnant Vegetation in Waverley* (1988).

Waverley Council is involved with the proposed habitat corridor system identified by Green Web Sydney, the aim of which is to identify viable native fauna habitat patches and contribute to 'linking corridors' for native fauna. Ideally, all parks within Waverley will be integrated into this corridor system and, to help push this along, a dedicated officer should provide input into the proposed masterplan of tree planting in Waverley and be consulted wherever park species selection is considered.

Habitat corridors should work towards linking areas of remnant vegetation, beach parks and adjacent public open space, schools and other institutional sites associated with tree planting and pocket parks. Pocket parks should be planted with tree clusters of locally indigenous tree species to provide habitat, food and refuge.

Several residents are concerned that pocket parks—small open spaces surrounded by urban development—are not fully utilised in both habitat corridors and pedestrian networks. When trees are planted in clusters they can provide a habitat of sufficient size to support small native fauna, especially when integrated with the understorey of shrubs and groundcovers naturally associated with that tree community.

This associated planting is to be found in *Soil Landscapes of the Sydney 1:100,000 Sheet* (Chapman and Murphy, 1980), the *Action Plan for Local Government* (Green Web Syd-



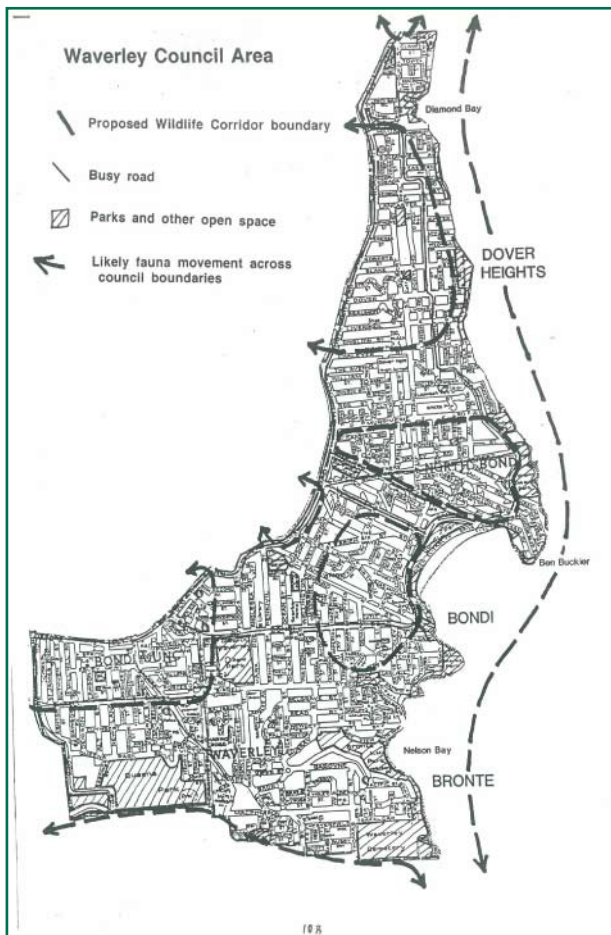


Image 20: Fauna corridors identified in Wildlife Habitat Corridor Study for Waverley Council (Ondinea, 1996).

ney, 2004) and *Endangered Ecological Community Information* (National Parks and Wildlife Service) with the landscape type planting lists available in Randwick Council's *Randwick Street Tree Masterplan*.

Wherever possible tree planting in parks should also integrate with existing pedestrian corridors thereby forming part of Council's overall integrated transport approach, as identified in the *Waverley Transport Policy*. Council's GreenLinks pedestrian network will become a key part of this integrated transport approach and will link walking routes to public transport infrastructure and bicycle routes.

STRATEGY

- Parks are to be recognised as an integral part of the network of wildlife and bird habitat within and beyond the Waverley LGA.
- Ensure that the following outcomes are incorporated in planning policy for parks in Waverley:
 - maximise opportunities for tall-growing species
 - incorporate aesthetic and amenity values
 - incorporate biodiversity and habitat values
 - match level of maintenance to level of use
 - integrate tree planting with pedestrian corridors.

ACTIONS

- Integrate within the Greening Masterplan the role of parks in the regional network of wildlife corridors and habitat locations identified by the Green Web Sydney plan.
- Adopt the procedures for selection, placement and management of park trees, as detailed in this TMP.
- Identify areas suitable for large street or park tree planting within the LGA, such as wide nature strips, broad medians and large roundabouts for future forest scale tree planting.

3 Remnant vegetation

This refers to vegetation that contains remnants of plant communities that were once characteristic of land that now falls within an urban area. It may therefore contain rare and endangered flora and fauna, their habitats, corridors and vegetation links. Very little remnant vegetation remains in Waverley, a product of historical trends towards intensive residential development plus a perception that the poor sandy and swampy soil vegetation communities are not suitable for retention. As a result, many people are not aware that remnant vegetation exists within their LGA, are unable to identify it and consequently do not value it.

Apart from one road reserve, remnant vegetation is generally zoned 6 (a) Open Space, although some is in 7 (e) Local Open Space Reservation—both of which still allow for recreation areas. The remnant east of Waverley Cemetery is zoned 5 (a) Special Uses.

The *State Environmental Planning Policy Number 19* (SEPP19) states that bushland zoned or reserved for 'public open space' does not require development approval from Council and so is not legally protected from development. There is no other protection currently in place for Waverley's remnant vegetation, other than those containing endangered ecological communities. Council's *Draft Gap Analysis on Sustainability* makes recommendations to protect remnant vegetation from development.

According to Council's two most relevant documents—the *Wildlife Habitat Corridor Study for Waverley Council* (Ondinea, 1996) and Council's *Remnant Vegetation in Waverley* (1998)—sites of remnant indigenous vegetation in Waverley serve as important nodes of habitat for native fauna. However, these nodes are currently not connected and should be linked by habitat corridors to encourage passage of native wildlife from major parks such as Centennial Park and Queens Park.

As part of increasing the habitat value of these corridors and public open spaces, their biological diversity needs to increase. This is more viable in public open space where aesthetic and safety considerations allow for a wider diversity of species than in streets.

Some of Council's open space trees are of historic, cultural, scientific, aesthetic, botanic and horticultural significance and do not appear in Council's *Register of Significant Trees*. It is increasingly recognised that locally indigenous trees contribute to the character and fabric of a place and helps to define them visually through the habit they provide for local flora and fauna. For more detail see the later chapter on Trees as Heritage.

The value of remnant vegetation should be acknowledged in all relevant Council controls to ensure that proposed developments identify in detail any remnant vegetation affected by development, especially within the vicinity of public open space. There is to be no adverse impact upon remnant vegetation from proposed development. Where there is some potential for a development proposal to affect remnant or regenerated bushland, development applications should be referred to an officer with Bushcare experience.

The following Council control documents should acknowledge the value of remnant vegetation:

- Waverley Local Environmental Plan 1996
- Small Parks Plan of Management
- Waverley Transportation Policy
- Register of Significant Trees
- Development Control Plan 2—Dwelling House and Dual Occupancy
- Development Control Plan 27—Exempt/Complying Development
- Any Development Control Plans dedicated to specific sites within the LGA.

Finally, Council could consider protecting areas of remnant vegetation identified in the Waverley LGA under such a zone as Environmental Protection 7 (a) (Remnant Vegetation).



This zone should only permit drainage, passive public recreation and utility installations and should encourage bush regeneration and prohibit damaging or removing remnant vegetation without consent.

STRATEGY

Ensure remnant vegetation is protected by:

- promoting Council's operational procedures to protect remnant vegetation
- listing remnant trees on the *Register of Significant Trees*.

ACTIONS

- Amend the Waverley Local Environmental Plan 1996 so that it provides planning protection to remnant vegetation within the LGA by including it within a new Environmental Protection zoning that prohibits removal of remnant vegetation and encourages regeneration practices.
- Amend all relevant Council controls as listed in this Plan to acknowledge the value of remnant vegetation.
- Amend the *Register of Significant Trees* to include trees of botanic, ecological and horticultural significance.
- Ensure Council's operational staff are fully conversant with techniques for managing both remnant vegetation and Council land adjacent to patches of same in Waverley.
- Where there is potential for a development proposal to affect remnant or regenerated bushland, development applications should be referred to an officer with Bushcare experience.

The following management measures should be adopted by Council to ensure the successful rehabilitation and conservation management of remnant vegetation:

- inform Council staff of the location of all remnant vegetation in Waverley
- inform Council staff of Bushcare procedures and for managing parkland adjacent to remnant vegetation
- clarify establishment procedures for rehabilitated areas
- investigate replacing the current watering truck with a model with a larger tank
- inform the community about the location and values of remnant vegetation. This should include information on species and communities and reminders about behaviour which helps preserve and protect the bushland
- provide a system of signposted pathways to protect remnant vegetation.

STRATEGY

Prepare and implement a comprehensive maintenance policy for trees and remnant vegetation in parks to include appropriate staff training programs.

ACTIONS

- Adopt recommendations on staff training in Bushcare procedures.
- Educate the community on the location and values of remnant vegetation.
- Install a system of signposted pathways to protect remnant vegetation.



4 Community participation and consultation

Wherever practicable the community should be encouraged to participate in the design, upgrade and maintenance of parks and reserves. Council could consider a community-based program involving volunteers in the maintenance of designated pocket parks.

STRATEGY

Inform and involve the community in the care and improvement of parks including bush-care activities.

ACTIONS

- Adopt a community education strategy that educates and includes the community in caring for our parks.
- Consider further volunteer programs to support parks.

If park trees require substantial pruning or removal, particularly if it will affect the visual appeal of the streetscape or adjacent properties, a similar process as that outlined in Chapter 1 (section 9: Public Tree Removal and section 10.1: Notification and response for public tree work) must be followed.

5 Bush regeneration

Bushcare activities are currently funded from Council's recurrent budget. Consideration should be given to increase funding to:

- improve level of bushcare resources
- allow for proactive bushland projects
- allow for informed integration of bush regeneration projects with wildlife habitat and corridors.



Image 21: Bush regeneration at Tamarama (southeast corner of the gully).

Bushcare projects must be undertaken in such a way that they ensure the sustainability of healthy trees in the area in accordance with the TMP.

STRATEGY

Ensure adequate funding for continued forward planning of bushcare sites and for their maintenance.

ACTIONS

Investigate extra funding opportunities for bushcare projects and to increase resources.

6 Increased canopy cover

The management of park trees is a significant factor in maintaining and increasing the percentage of tree canopy cover within the Waverley LGA. This can be further improved by undertaking the following measures:

- determine the existing canopy cover within Council's public open space
- produce an inventory of trees in Council's open space. Like the Street Tree Data-



base, this will help when planning the replacement of existing species as they become dangerous and/or reach their Safe Useful Life Expectancy. It also helps when planning habitats and corridors for wildlife, creating pedestrian links and increasing canopy cover

- add trees of historic, cultural, scientific, aesthetic, botanic and horticultural significance to Council's *Register of Significant Trees*.

STRATEGY

Gather information on park trees and add to Council's tree database and *Register of Significant Trees* and include open space trees as part of the Greening Masterplan.

ACTIONS

Adopt the above recommendations.

7 Crime Prevention Through Environmental Design (CPTED) principles

The aim of Crime Prevention Through Environmental Design is to make crime harder to commit through well thought-out design of the physical environment. The idea is to make crime more difficult to commit, increase the risk of detection and reduce opportunities for concealment. CPTED principles generally apply to open spaces and strategies such as providing better lighting and reducing dark and spaces can make a real contribution to increasing the safety of an area. Trees in open spaces should be chosen and maintained so that their height, width and foliage cover do not provide opportunities for concealment and do not discourage legitimate park-goers from visiting local open spaces.

STRATEGY

Ensure tree species selection incorporates CPTED principles.

ACTIONS

Park trees should be chosen and planted so that they do not compromise CPTED principles, as stipulated in Section 79C of the *Environmental Planning and Assessment Act 1979*.

8 Plans of Management

The Local Government Act 1993 requires that all community land (as defined under the Act) is the subject of a plan of management. The majority of Council's parks and reserves are classified as community land and therefore require plans of management. These park plans of management often outline strategies and actions that refer to issues of tree management and should be referred to in respect of those issues. However, there must be a consistency in the policy of community notification and consultation between these plans of management and this tree management plan.

STRATEGY

Ensure that Plans of Management for parks and reserves are consistent with the principles of tree management contained in this document.

ACTIONS

Plans of management are to be checked for consistency with this Tree Management Plan and should follow the outlined procedures for tree pruning/removal in parks and reserves.

Chapter 4

Trees on private land



Trees on private land are found on land belonging to residents, commercial enterprises, community groups, private institutions such as hospitals and churches, and State and Federal government agencies like schools and local government.

After consultation sessions and meetings with Council staff, Councillors, the wider community and other stakeholders it is clear that trees on private land are valued and treasured because they provide:

- privacy
- greater property value
- softening of 'ugly' buildings
- wildlife corridors
- potential food sources (ie. fruit from trees)
- contribute to the character of the area and provide pleasing public outlooks.

These same consultations sessions show that there are a range of issues that matter to the community and other stakeholders when it comes to trees on private property and these are examined in detail below:

1 Tree Preservation Orders

Council's current TPO requires that residents and property owners must apply for permission to top, lop, trim, prune, cut down or remove trees on private land. This applies to any tree with a:

- height of four metres or over
- canopy spread of four metres or more
- trunk width of 300mm or over at one metre above ground level
- listing on the *Waverley Register of Significant Trees*.

It is up to the owner of the property concerned to make an application to Council to carry out work to individual trees. Council's Tree Management Officer will inspect and assess the tree/s according to professionally applied, consistent criteria and the applicant will be notified once the application is approved, refused or approved with conditions. A written permit will be issued if approval is granted. It may be a condition of consent that property owners engage a qualified tree surgeon to carry out the work, according to the relevant Australian Standard *AS4373-1996 Pruning of Amenity Trees*. Consent will quantify the percentage of pruning work or other work allowed under the Tree Preservation Order and the applicant must clearly indicate which trees are the subject of the consent.



In considering an application to alter or remove a tree on private land Council's evaluation will consider:

- the size and health of the tree
- potential unavoidable dangers to property or person by either inaction or proposed action within 10 years
- the effect on the health of the tree
- the environmental value of the tree (its status as locally indigenous, as weed, as habitat or as part of the community)
- its impact on nearby remnant vegetation
- the cultural value of the tree (its status as landmark specimen and in defining local streetscape and character, its historical status, listing on the *Waverley Register of Significant Trees* and the traditional beliefs of the owner, such as Aboriginal totemic value)
- its location within a space of likely future development (in residential zones this translates to anywhere within three metres of the established building zone).



Image 22: A tree on private property in Queens Park, providing public and private amenity and softening the streetscape.

1.1 WHEN CONSENT MAY BE GRANTED

Taking into account the above, consent can be granted for the following:

- removal of unsuitable or hazardous trees
- thinning of crowns to preserve solar access, some selective pruning and reduction of the weight of limbs
- maintenance pruning to remove dead, diseased, dying and defective branches
- selective pruning to remove branches causing conflict through encroachment on own or neighbouring buildings
- root pruning of trees to ameliorate damage to built and natural structures in such a manner as to not compromise the health of trees
- pruning for service lines
- lifting of crowns to allow pedestrian or vehicular access
- pruning for vehicle sight lines, signage and RTA requirements
- removal of trees in conflict with built structures, where all engineering alternatives have been considered
- for construction or extension of buildings where there is no alternative to maintain the tree/s
- minimum work to ensure trees remain safe
- pruning and removal of fruit trees and flowering fruit trees not located on a heritage listed property or the *Register of Significant Trees*, depending on the species in question.

When granting consent to remove a tree an applicant may be required to replace that tree with an advanced approved species which is to be established and maintained for a specified period, especially if the removal of the original tree impacts on neighbours or the streetscape. Random audits of work granted consent will be carried out by Council.

Before planting any replacement tree it is strongly recommended that the eventual height and size of the tree be considered, particularly in regard to:

- power lines and other services such as water, sewer and drainage lines
- buildings, walls and pathways
- sunlight
- neighbouring properties
- suitability (trees or shrubs native to the coastal are highly recommended).

1.2 WHEN CONSENT MAY NOT BE GRANTED

Council may not consent to the following work:

- work on trees without owners' or owners' agent's signature on the application
- removing trees for solar access, leaf, fruit or sap drop, bird or bat droppings, and damage to sewer pipes and built structures (unless all engineering alternatives have been considered)
- removing trees that are healthy and stable
- removing or pruning trees for views
- pruning trees in a manner contrary to the *Australian Standard AS4373-1996 Pruning of Amenity Trees*
- pruning work that is outside the tolerance of particular species, for example figs pruned by more than twenty per cent are more susceptible to sunburn
- tree work for emotive reasons, beyond the scope of the possible reasons given above
- removing trees because they inhibit grass or garden growth
- removing trees because of causing allergies, unless the tree can be medically linked to the allergy
- work which will seriously disfigure or unbalance the tree
- work which will alter soil levels within the drip line of a tree
- removing trees because they cause damage to minor ancillary structures such as foot-paths and driveways
- requests to reduce the height of trees
- pruning to reduce the size of a tree listed on the *Register of Significant Trees*.

Instances where a formal Council application is not required, *provided the applicant submits written arboricultural advice from an accredited provider*, occur when:

- the tree is dead
- the tree is a recognised noxious or environmental weed and is not on Council's *Register of Significant Trees* (see Appendix for list of weeds). The applicant must first seek advice from Council
- the tree is less than four metres in height and has a trunk diameter less than 300mm measured at one metre above ground, and has a canopy spread of less than four metres
- pruning of dead branches (Council encourages pruning works to be done by a qualified arborist where necessary and in accordance with *Australian Standard AS4373-1996 Pruning of Amenity Trees*)
- pruning of branches that are within the set parameters of electric powerlines, as required by clause 23 of the *Electricity (Overhead Line Safety) Regulation 1991* (Council encourages pruning works to be done by a qualified arborist where necessary and in



accordance with *Australian Standard AS4373-1996 Pruning of Amenity Trees*). The applicant must first seek advice from Council

- pruning and removal of fruit trees and flowering fruit trees not located on a heritage listed property or the *Register of Significant Trees*. The applicant must first seek advice from Council.
- pruning and reshaping of Cypress Pines that is not greater than 10 per cent of the whole canopy.

1.3 CONSEQUENCES FOR REMOVING, DAMAGING OR PRUNING A TREE WITHOUT CONSENT

If a resident or property owner removes, damages or prunes a tree without Council's consent they may be liable for fines of up to \$20,000. They may also be liable if they engage or allow another person to remove, prune or damage a tree.

The value of a significant tree must be the foremost consideration of any property owner who is considering building extensions or who may wish to modify or remove trees for some other reason. Building additions or alterations will have to be set out so that the tree remains intact. If a tree is listed in the *Register of Significant Trees* there will be a more stringent assessment.

The effectiveness of Council's TPO can be compromised by lack of public awareness, difficulty to successfully prosecute offenders and purchasers not being aware that a TPO is relevant to a property. Some residents question Council's jurisdiction over private trees, based on private rights versus public enjoyment, neighbour nuisance and possible environmental benefits. However, most seem to agree that a tree is partly public property to the extent that it impacts on the public domain.

1.4 ARBORICULTURAL ADVICE AND REPORTS

Arboricultural advice must be provided by a person with a minimum qualification equivalent, using the Australian Qualifications Framework, to the NSW TAFE Certificate Level 4 or above. This does not include people holding the Certificate in Tree Surgery or equivalent. There may be instances when Council will request further independent arboricultural advice.

Further supporting evidence for the removal or pruning of a tree/s may require an arboricultural report; these are usually appropriate to development sites or significantly prominent trees and should include:

- the name of the client, the specific author and their contact details and qualifications, the purpose of the report, subject site and date/s of inspection
- methodology
- summary of findings
- a map showing the location of all relevant trees, numbered to correspond to text in the report
- for each tree the report must provide common and scientific name, height at inspection, canopy spread, trunk diameter (measured at one metre height) and number of trunks if more than one, form (columnar, triangular or circular), approximate age and photograph/s
- comments on the condition of the tree, such as signs of die-back and other trunk indications, mould, fungi, loss of branches, leaves, stunted or distorted growth, wounds, cavities, cracks, splits, forking, pests and diseases and root conditions
- for diseased specimens, discussion of influences such as nearby structures, soil, weather exposure or previous human intervention
- Safe Useful Life Expectancy rating



- recommended action or management status with reasons, including consideration of options, ie. retain and nature of remediation, transplant, remove
- information should preferably be presented in an accepted scientific format, such as a grid format
- resource material should be referenced in an accepted method, such as Harvard, and include only data specifically referenced in the report
- all reports from Resistograph testing to include clear and legible copies of the charts.

As mentioned earlier, the SULE rating of a tree refers to its life expectancy, modified first by its age, health, condition, safety and location (to give safe life expectancy) then by economics, effect on better trees and sustained amenity. SULE ratings typically plot the health of the tree along the Y-axis against the length of the SULE along the X-axis. Any SULE system that is methodical and transparent is acceptable.

1.5 APPEALING A DECISION

Should an applicant be dissatisfied with Council's decision on a TPO they can request a review by another Council officer (the request will require supporting evidence from an arborist, engineer or other relevant professional). If they are dissatisfied with the review they may also:

- consider an appeal to Council, including addressing a Council meeting
- lodge a development application to carry out the work and then appeal to the Land and Environment Court on Council's decision.



Image 23: Trees on private property in Bondi, contributing landmark qualities to streetscape character.

1.6 IMPROVING THE EFFECTIVENESS OF THE TPO

Waverley Council's TPO will be incorporated in full as a schedule in the *Waverley Local Environmental Plan 1996* and should be easily accessible through Council's website. Council's determination to preserve trees within the LGA could also be strengthened by incorporating the NSW Department of Planning's *Standard Provisions for Local Environmental Plans in NSW* into the TPO.

Avenues for successful prosecution of domestic tree loss carried out in contravention of Council's TPO are to be investigated under all jurisdictions available to Council. This should examine costs, penalty and desired outcomes, timeliness and likelihood of success. Consideration should be given to imposing on-the-spot fines for minor breaches of the TPO. Council can also look at re-wording the consent to reflect the preferred working of a court summons.

1.7 PUBLIC OWNERSHIP AND NOTIFICATION OF A PRIVATE TREE

As with Development Applications, an application for consent under Council's TPO is to undergo a period of notification to relevant neighbours, including all unit holders within a block of units, prior to the final decision being made.



2 Disputes between neighbours

Council's role in disputes between neighbours concerning privately owned trees is currently limited to the Development Application stage of the construction process. Public information to this effect can be found on Council's website (www.waverley.nsw.gov.au) under the heading 'Neighbours' Trees'.

Recent court cases have found that branches of a tree that cross neighbourhood boundaries can be legally pruned, as long as consent has been granted under the Tree Preservation Order, the health of the tree is not compromised and work is in accordance with Australian Standards and OH&S provisions. However, all branches, fruit and leaves from that tree continue to be the property of the owner and must be returned to them.

A similar situation applies to pruning roots of neighbouring trees. However, it is recommended that root mapping is undertaken to prove that the roots in question are the cause of the problem, as opposed to reactive soils or some other impact. If the tree owner refuses to give approval for root pruning the applicant may consider civil action through the courts.

Disputes may also arise between neighbours over inappropriate tree planting. Sometimes trees are planted with good intentions but the wrong species could cause potential problems for neighbouring properties by blocking views/solar access or damaging sewer lines, fences and other structures. Presently, Council can intervene at the Development Application stage by ensuring compliance with approved landscape plans. These plans should reference the Council's recommended species list included in Volume two of this tree management plan.

There is very little information available for the general public on suitable trees and shrubs for the local area. Community education in the form of the recommended tree species list can be made available as a brochure and listed on Council's website. This list can also highlight current problem trees such as Robinias and Cypress hedges and suggest more suitable species as alternatives.

3 Private fruit trees

As part of promoting Ecologically Sustainable Development in Waverley it has been suggested that fruit trees such as citrus and pecan be planted on private land, particularly along pedestrian routes and GreenLink laneways. However, this should be weighed against their potential for fruit drop, capacity to attract predators of small native birds and associated liability claims.

4 Impact of private trees on remnant vegetation

As discussed in the previous chapter, very little remnant vegetation remains in Waverley. Private trees planted next to remnant vegetation can have a negative impact that should be considered when evaluating proposals to plant certain species on private property. Environmental weeds are an obvious example.

5 Trees on strata or company title properties

In the case of trees within strata or company title properties, the applicant must ensure that the authorising agent and/or owner have endorsed the application by providing the body corporate or company seal (for strata and company title respectively). The body corporate is to notify Council and neighbours more than one week in advance of work being performed, where practical.

6 Private trees overhanging Council property

Where private trees overhang Council property, footpaths or roadways the tree is regarded as the owner's responsibility and therefore onus is on the owner to prune the branches when requested. An order for the pruning of overhanging branches can be issued under Council's by-laws.

7 Tree planting on private land

When narrow blocks require deciduous trees for adequate solar access, it is important to ensure that deciduous species are planted that are consistent with the form of the existing streetscape (of the same scale and nature where space allows).

Fruit trees on private land, especially adjacent to the popular pedestrian laneways are to be encouraged, having been assessed against their potential for fruit drop and associated liability claims. (See attached species selection in Appendix.)

STRATEGY

- Adopt a formalised process for assessments under the TPO and ensure that the process is made available to all relevant personnel and the community.
- Ensure promotional and educational material is available to the community so that they understand Council's intentions regarding tree planting and management on private land.
- Incorporate the TPO within the *Waverley Local Environment Plan 1996* making reference to it in all relevant planning controls and policies. Review the system of prosecutions and fines under the TPO.

ACTIONS

- Where minor pruning has occurred investigate the possibility of on-the-spot fines.
- Prepare promotional and educational material for community use to promote Council's intentions regarding tree planting and management on private land.
- Council officers to carry out random audits of work granted consent under the order.
- Consider including the NSW Department of Planning's draft *Standard Provisions for Local Environment Plans Pertaining to Preservation of Trees* in the *Waverley Local Environment Plan 1996*.
- Consider including in all relevant Council documents the view that a private tree is considered in part to be public property and as such consent is required under the TPO to trim or remove any tree that happens to grow on private land.



Chapter 5

Trees in development



Land use within the Waverley LGA is principally guided by the *Waverley Local Environment Plan 1996* which sets out the type of future development allowed in each location. It contains specific aims and general provisions in relation to trees and makes reference to the Tree Preservation Order and Heritage Items.

Waverley Council has adopted a series of Development Control Plans which contain more detailed controls for development and provide explanations of the relevant controls in the Waverley Local Environment Plan. For example, Development Control Plans that will impact on tree management include:

- Multi-Unit Housing (1)
- Dwelling House Development (2)
- Heritage (18)
- Dual Occupancy (20)
- those relevant to specific sites.

The Waverley Local Environmental Plan divides the LGA into seven broad zoning classifications, each of which is divided into sub-zones which specify the land uses that are permissible. For example, the residential areas are zoned Low, Medium, Medium-High and High Density and these distinguish the different concentrations of development permissible in each area. To supplement a number of Council's Development Control Plans, Council has adopted policies, strategic plans (such as the Bondi Junction Strategic Plan) and other best practice documents.

Planning and land use control within the Waverley LGA is influenced by NSW State Government agencies, including:

- Department of Planning (formerly DIPNR), which governs state and regional planning legislation
- Department of Natural Resources (formerly DIPNR), which manages legislation to protect the State's water and soil resources
- Department of Environment and Conservation (National Parks and Wildlife Service), which manages legislation for National Parks, threatened species and Aboriginal sites
- Department of Environment and Conservation (Environment Protection Authority), which manages legislation relating to pollution
- NSW Heritage Office, which guides the protection of non-Aboriginal heritage
- Department of Primary Industries (NSW Fisheries), which protects aquatic flora and fauna and manages the fishing and oyster industries
- NSW Rural Fire Services, peak planning body for development in bushfire prone areas

- Roads and Traffic Authority (RTA), which is responsible for the maintenance and development of the roads and traffic system of NSW, in conjunction with State and Local Government agencies.

Development Applications are assessed by Council's Planning Officers, together with referrals to specialist officers when necessary, such as Landscape Architects, Traffic Engineers and the Tree Management Officer. The development application process follows a series of stages:

- pre-lodgement, which includes the need for technical reports
- lodgement
- assessment, involving referrals to Council officers, appraisal against planning controls and public notification, possible site inspection
- determination; under delegated authority, or by Council's Development and Building Unit, or by Council's Development Control Unit, or by a full Council meeting
- approval with conditions, refusal or deferral for changes
- appeals to the Land and Environment Court.

Development refers to:

- new dwellings or additions to existing dwellings
- larger developments including: multi-unit housing, mixed developments, developments in commercial zones; or new dual occupancies.

Meetings and written communication with Council staff, Waverley Councillors, the general Waverley community and other stakeholders indicate that trees in the development process are valued because they:

- soften 'ugly' buildings
- add to property value
- may define existing landscape character.

Development applications (DAs) are primarily the responsibility of Council's Planning and Environmental Services Department. When a DA is lodged it is allocated to one of Council's Planning staff and is advertised. Where trees are marked on the site analysis, or a landscape plan is included, a copy is forwarded to Council's Tree Management Officer for comment. This officer will often be contacted by planning staff after the initial inspection if they discover trees that have not been marked on the original plans, or if the building works are likely to affect neighbours' trees. If appropriate landscaping measures have not been covered in the original DA, Council's Tree Management Officer will be asked to give advice.

The Tree Management Officer is also responsible for decisions on street trees within the DA process, including driveway applications, bonds, conditions and replacement species, as well as species selection for street tree planting. Meetings and written communication with Council staff, Waverley Councillors, the general Waverley community and other stakeholders revealed several issues relating to trees in the development process:

1 Protecting trees through development and assessment controls

The Development Application assessment process sometimes appears to overlook trees. The trees on and adjacent to the site in question are not always included in the submitted plans and are not always considered in long-term planning of private open space. The degree to which trees are considered in Council's Development Control Plans (DCP) is uneven.



There is some perception among residents that building footprints are increasing in relation to the size of the blocks, consequently reducing tree-planting opportunities. For instance, side setbacks are considered prohibitively small for tree planting. There is no recognised process within the DA assessment process to protect trees so that the tree resource is maintained and extended.

One integrated and complete set of landscape and tree criteria is required for Development Assessments. Landscape and tree criteria from each and every Development Control Plan could be analysed to create an integrated set of criteria. These criteria can then be placed consistently and clearly into every relevant DCP.

For example:

- streetscape assessment objectives should make mention of trees, as per Council's definition of 'streetscape'
- the role of trees is to be defined in Residential Character Studies
- Landscape Design Guidelines are to be adapted from those found in *Waverley Development Control Plan No 21 for 196 Birrell Street (n.d.)*
- vehicle access and parking should mention the impact of trees on pedestrian and vehicle sight lines
- the impact of trees (existing and proposed) on visual privacy, energy efficiency, solar access, microclimate and view-sharing is to be addressed
- site management is to indicate the need for tree protection measures
- guidance in establishment and maintenance should be indicated.

The term 'streetscape' means the character of an area, whether it be street or precinct, defined by the special arrangement and visual appearance of built and landscape features when viewed from the street (*Development Control Plan No 20—Dual Occupancy*).

One separate Landscape Code is considered more likely to be overlooked or ignored by both applicants and development assessment Council officers alike. This integrated set of criteria should include information from Council's *Trees on Development Sites* document.

1.1 EASILY ACCESSIBLE DEVELOPMENT GUIDELINES

Council's policy guideline *Trees on Development Sites*, including the checklist, should be amended to accurately reflect the recommendations of this Tree Management Plan. Council information on developers' roles and responsibilities for trees should be made easily available to developers.

For example, in addition to the revised *Trees on Development Sites* guidelines, consistent and clear design guidelines for private landscaping should be incorporated into the Development Application form. Clear Development Application guidelines are required for on-site coverage and setbacks from trees, including the percentage of native and/or indigenous trees. These guidelines are to be integrated into the Development Application checklist.



Image 24: Typical tree on a development site in Bondi, requiring protection.

1.2 TRANSPARENT TREE ASSESSMENT CRITERIA

The Tree Preservation Order is to be part of the Development Application process. Within a Development Application, consent is to be applied for under the Tree Preservation Order for those trees proposed for removal or pruning. This forms part of the application form.

As addressed above, assessment of an application for consent under the Tree Preservation Order is to acknowledge a broad range of economic, cultural and environmental values when evaluating a tree. That is, in considering an application to alter or remove a tree on private land, the evaluation is to consider:

- the size and health of the tree
- potential unavoidable dangers to property or person, by either inaction or the proposed action within 10 years
- effect on the health of the tree
- the environmental value of the tree—its status as locally indigenous, as weed, as habitat, as part of a community
- impact on nearby remnant vegetation
- the cultural value of the tree—its status as a landmark specimen in defining local streetscape and character, its historical status; its listing on the *Register of Significant Trees*
- location within a space of likely future development. In residential zones this translates to anywhere within three metres of the established building zone.

The value of a significant tree must be a main consideration of property owners who may be considering building extensions, or who may wish to modify or remove trees for some other reason. Building additions or alterations will have to be set out so as to retain the tree intact. Listing of trees in the Significant Tree Register will trigger a more stringent assessment and will discourage unauthorised removal.

Having first and foremost taken into consideration the above criteria, consent may be granted for the following:

- removal of unsuitable or hazardous trees, as defined above
- thinning of crowns to preserve solar access, some selective pruning and reduction of the weight of limbs
- maintenance pruning to remove dead, diseased, dying and defective branches
- selective pruning to remove branches causing conflict through encroachment on own or neighbouring buildings
- root pruning of trees to ameliorate damage to built and natural structures in such a manner as to not compromise the health of trees
- pruning for service lines
- lifting of tree crowns to allow for pedestrian or vehicular access
- pruning for vehicle sight lines, signage and RTA requirements
- removal of trees in conflict with built structures where all engineering alternatives have been considered
- for construction or extension of buildings where alternative designs are not feasible
- minimum work to ensure trees remain safe
- pruning and removal of fruit trees and flowering fruit trees not located on a heritage listed property or listed on the *Register of Significant Trees*, depending on the species in question.



The consent will quantify the percentage of pruning or other work allowed under the order. The owner is expected to clearly indicate which trees are the subjects of the Tree Preservation Order request. When granting consent to remove a tree, an applicant may be required to replace that tree with a mature approved species, which is to be established and maintained for a specified period. Council will carry out random audits of work granted consent under the order.

Having first and foremost taken into consideration the above criteria, Council may not approve the following work:

- trees without owner's or owner's agent's signature on the application
- removing trees for solar access, leaf, fruit or sap drop, bird or bat droppings, and damage to sewer pipes and built structures unless all engineering alternatives have been considered
- removing trees that are healthy and stable
- pruning trees in a manner contrary to *Australian Standard AS4373-1996 Pruning of Amenity Trees*
- pruning work that is outside the tolerance of particular species – for example, figs pruned by more than 20 per cent can be inclined to sunburn
- tree work for emotive reasons
- removing or pruning of trees for views
- removing trees because they inhibit grass or garden growth
- removing trees because of causing allergies, unless the tree can be medically linked to the allergy
- work which will seriously disfigure or unbalance a tree
- work which will alter soil levels within the drip-line of a tree
- removing trees because they cause damage to minor ancillary structures such as footpaths and driveways
- requests for reducing the height of trees
- pruning to reduce the size of a tree listed on the *Register of Significant Trees*.

Instances where a formal Council assessment is not required, *provided the applicant provides arboricultural advice*:

- the tree is dead.
- the tree is a recognised noxious or environmental weed and is not on Council's *Register of Significant Trees*. See the list of weeds in appendix
- the tree is less than four metres in height and has a trunk diameter less than 300mm (measured at one metre above the ground), or has a canopy spread of less than four metres;
- pruning of dead branches – Council encourages such pruning works to be undertaken by a qualified Arborist where necessary and in accordance with *Australian Standard AS4373-1996 Pruning of Amenity Trees*.
- pruning of branches that are within the set parameters of electric powerlines, as required by Clause 23 of the *Electricity (Overhead Line Safety) Regulation 1991*. Council encourages pruning works to be undertaken by a qualified Arborist where necessary and in accordance with *Australian Standard AS4373-1996 Pruning of Amenity Trees*
- tree species that have been declared a noxious plant for the Waverley Council Area under the *Noxious Weeds Act 1993*.



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

Should an applicant be dissatisfied with Council's decision on the Tree Preservation Order, they can request a review (the request will require supporting evidence from a relevant professional i.e. arborist, engineer or builder). If they are they dissatisfied with the review they may:

- consider an appeal to Council, including addressing a Council meeting;
- lodge a development application to carry out the work, and then appeal to the Land and Environment Court on Council's decision.

2 Policing approved landscape plans

2.1 TREE PROTECTION

Within a Development Application, measures are to be identified for segregating trees and buildings during construction.

2.2 BIODIVERSITY INTEGRATED WITHIN RELEVANT DEVELOPMENT CONTROL PLANS

The recommendations relevant to biodiversity within the Waverley Council's current draft *Built Form Planning Instruments: Gap Analysis on Sustainability*, which support the use of locally indigenous species except where in conflict with solar access, are to be integrated within relevant Development Control Plans.

2.3 VIABLE ESTABLISHMENT AND MAINTENANCE PROCEDURE

Council will impose conditions and/or bonds where necessary to ensure maintenance procedures are followed for the successful establishment of new trees and landscaping and for the protection of existing trees. Further inspections will be carried out to check compliance.

2.4 LANDSCAPING BONDS

Council is to keep a landscape bond over a substantial length of time to ensure adherence to the proposed Landscape Plan.

2.5 RECOMMENDED SPECIES LIST

The recommended tree species list and performance criteria found in the Appendix is to be widely available, and form the basis for a later broader species list of trees, shrubs and groundcovers. For example, it is to be available on Council's web site and as a pamphlet and also referred to in Development Control Plans and the Development Application Pack.

2.6 REFERRAL TO ALL RELEVANT COUNCIL OFFICERS

Wherever trees may be affected by a Development Application, referral is to go to Council's Tree Management Officer. Where broader design or community issues are involved, referral is also made to Council's Landscape Architect. Clear guidelines are required for referral to Environmental Officers, due to possible links to Green Web Sydney, the *Register of Significant Trees*, endangered species or other environmental issues.

Investigate whether extra landscape and/or arboricultural officers are needed to provide input to Development Application assessments.

2.7 ENFORCEMENT OF TREE PRESERVATION ORDER AND DEVELOPMENT APPLICATION CONDITIONS

Penalties for not complying with a Tree Preservation Order and/or DA conditions will be increased. This will allow Council the discretionary power to increase fines where non-



compliance with the Tree Preservation Order & DA conditions is considered to be deliberate, often for monetary gain.

Currently, bonds vary between \$1000 and \$40,000 depending on the importance of the tree and the cost of the project. For example, a lesser bond may be imposed on an owner-occupied dwelling than a unit development. A valuation of the tree/s is not used in determining the bond.

2.8 TREES WITHIN THE SITE ANALYSIS

Within a Development Application and as part of the site analysis, all tree species on the site are to be identified. This includes neighbouring, street and park trees likely to be affected by the proposal. Although less stringent than an Arborist's report, the site analysis must include:

- a map showing the location of all relevant trees, with each tree numbered
- for each tree: the common or scientific name, height at inspection, canopy spread, trunk diameter at one metre height and number of trunks, if more than one
- what trees will be retained, removed or transplanted and the reasons why.

2.9 DEEP SOIL PLANTING

Open space requirements ensure that deep soil tree planting is a major element on development sites, provided there is no conflict between the proposed trees and buildings, walls and potential solar access.

STRATEGY

- Incorporate the Tree Preservation Order into all Development Applications involving existing site trees, following a formalised process for assessments.
- Document and instigate a clear and complete referral process for assessment of tree related issues within Development Applications.
- Incorporate ESD principles within Development Control Plans relevant to trees.

ACTIONS

- Adopt and implement the procedures for assessment of applications under the Waverley Tree Preservation Order, as included in this TMP.
- Ensure that the Street Tree Database and *Register of Significant Trees* are readily available to all Council officers concerned with any aspect of tree maintenance and management.
- Investigate on-the-spot fines for violations under the Tree Preservation Order.
- Require identification of trees in surveys provided with Development Applications, as per the recommendations above.
- Impose conditions and bonds on Development Approvals to ensure adequate maintenance and proper establishment of new trees and landscape works generally on both private and public land. This is to require a Council inspection for compliance.
- Incorporate controls for deep soil tree planting in all relevant Council development controls.
- Ensure that the process is made available to all relevant personnel and the community.
- Investigate additional staff resources to ensure efficient execution of the new referral process.
- Review the system of prosecutions and fines under the Development Application to ensure all conditions pertaining to trees are enforced.

Chapter 6

Trees as heritage



Council's *Register of Significant Trees* defines significant trees as “those trees that make a major contribution to the everyday landscape and are therefore of special value to the community”.

The Australian Heritage Commission (1991) gives a somewhat broader description of trees as elements of heritage significance. The description includes avenues, tree groups, boundary markers, urban trees, plantations and survey markers.

The Burra Charter (1979) defines heritage as places that are “worth keeping because they enrich our lives—by helping us understand the past; by contributing to the richness of the present environment; and because we expect them to be of value to future generations”.

The Burra Charter is Australia’s adoption of the resolutions of the International Charter for the Conservation and Restoration of Monuments and Sites in 1979.

The National Trust’s Significant Tree Committee suggests that a significant tree could be any tree:

- of outstanding aesthetic quality
- outstanding for its large height, trunk diameter or canopy spread
- that is particularly old or venerable
- which occurs in a unique location or provides a significant contribution to the landscape, streetscape or townscape, including remnant vegetation and important landmark trees
- associated with a well-known public figure or ethnic group
- commemorating or having association with an important historical event
- that is rare to an area, e.g. beyond its normal range of distribution or common cultivation, a rare species or variety, an endangered species
- which exhibits a curious growth form or physical feature, including unusually pruned forms
- which is of horticultural or genetic value and could be an important source of propagating stock
- which forms part of a recognised historic garden, park or town.



Image 25: The Canary Island Date Palm (Phoenix canariensis) is valued for its contribution to heritage and local identity.

Beyond the cultural and historical interpretation, trees are considered as significant because



of the natural heritage they provide. In Waverley, trees are currently identified as significant according to historic, cultural, scientific and aesthetic criteria.

Many of the listings are primarily of historic significance, with several Fig species predominating, including Moreton Bay, Port Jackson and Hills Figs. Phoenix Palms and Norfolk Island Pines rate for their cultural use and they may also be quite old trees.

Trees in the scientific category are species that were not commonly seen in Waverley, such as Washington Palms.

Significant trees are to be found in Council's streets and public parks and on private property and currently include:

- trees listed on Waverley Council's *Register of Significant Trees*, including trees on private property identified by Council's Landscape Architect
- trees described in the Waverley Heritage Study
- trees occurring within Heritage Conservation Areas identified in *Waverley Development Control Plan No. 18—Heritage Conservation*.

Many public trees, while logically identified as significant by virtue of their being mentioned in the Waverley Heritage Study or occurring within Heritage Conservation Areas, are not included in the *Register of Significant Trees*. This anomaly is addressed later in this section.

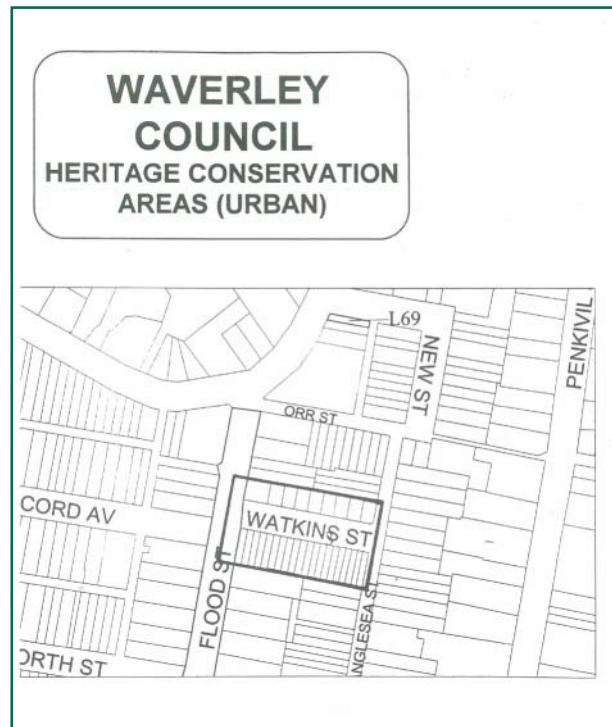


Image 26: Typical heritage conservation area from WDCP No18 – Heritage Conservation.

1 Protection and recognition

The Tree Preservation Order is the established mechanism for protecting trees. The *Register of Significant Trees* is an additional tool which draws attention to particularly valuable or outstanding trees as defined above.

Over and above the general requirements of the Tree Preservation Order with regard to protection of trees, applications pertaining to listed significant trees are subject to particularly stringent assessment.

As with all trees protected under the Tree Preservation Order, the intent is that trees should not be pruned, trimmed, removed or lopped where the action will compromise the health or environmental or aesthetic value of the tree. This is more strictly observed in the case of significant trees, which must be kept intact and where often the physical form of the tree is a major factor contributing to its significance.

Currently, some trees of ecological value are not protected in Waverley. Only trees containing endangered ecological communities are protected. Many ecologically valued trees (those of habitat value) are on private land.

1.1 ARBORIST'S REPORT

This Plan recommends that an Arborist's report should be required for any application under the Tree Preservation Order or for any Development Application that has the potential

to impact on tree stands or listed significant trees. With regard to trees registered as significant, the Arborist's report would be required to provide a specific opinion on the impact of the proposal on the significance of the tree.

1.2 TREES ON DEVELOPMENT SITES

The existence of a listed significant tree on or within the vicinity of a site will constitute a substantial constraint on development and a conservative approach will be taken on any potential for development to impact on a significant tree. New buildings, additions or alterations will have to be set out so as to retain the tree/s intact.

Where development is proposed in the vicinity of a listed significant tree or trees, Waverley's *Register of Significant Trees* requires that significant trees must be protected and that the "proposal should aim to integrate the tree with the built form, and promote its environmental values".

1.3 RECOGNITION OF SIGNIFICANT TREES IN THE DEVELOPMENT APPLICATION PROCESS

All items listed in the *Register of Significant Trees* will be included in the draft Waverley Heritage Assessment and could be included in the new draft Local Environment Plan.

1.4 ADDING SIGNIFICANT TREES TO PLANNING CONTROLS

Significant trees are to have standing within the development process. All relevant Development Controls Plans are to refer to the *Register of Significant Trees* as a requirement of assessment.

1.5 INCLUSION OF TREES IN LANDSCAPE CONSERVATION AREAS

Individual trees in Landscape Conservation Areas are to be assessed for inclusion in the Register.

1.6 PROPERTY DESCRIPTIONS

The Register applies to land in a range of zonings across residential, commercial and special use categories. The requirement to keep trees intact may have implications for the development potential of properties with regard to site coverage and consequent achievable floor space ratios. Therefore, as recommended later, all trees on private property that are listed on the Register are to be included on all relevant property descriptions including in particular Council's Section 149 Certificates.

Streets within Waverley that are of heritage value are often defined, in part, by the trees found within them. By association, these trees are also of heritage value and by definition are significant. These streets—such as Blair Street at Bondi, Oceanview Avenue at Dover Heights and Chesterfield Parade at Waverley—are described in the Waverley Heritage Study and listed in the Schedule of Heritage Items in the *Waverley Local Environment Plan 1996*.

1.7 PROMOTION OF VALUES

The value of a significant tree should be drawn to the attention of the public in general and in particular to property owners who may be considering building extensions, or who may wish to modify or remove trees for some other reason. It should also be made



Image 27: Hills Figs in Chesterfield Parade, defining local character and making a heritage connection.



clear that trees listed in the Register will trigger a more stringent assessment and will act as a disincentive to unauthorised removal.

1.8 TRANSPARENCY OF INCLUSION IN COUNCIL'S REGISTER OF SIGNIFICANT TREES

Transparency is required of the process of including trees in Council's *Register of Significant Trees*. The Register should be made easily available to the public and be easy to find on Council's website.

1.9 SPECIALIST ADVICE

Specialist advice may be required in order to develop the framework for nominated trees to be included in the Register.

STRATEGY

Incorporate trees listed on the *Register of Significant Trees* within the *Waverley Local Environment Plan 1996* and make sure that significant trees are considered during the Development Application assessment process.

ACTIONS

- Amend the *Waverley Local Environmental Plan 1996* by updating the Schedule Heritage of Landscape Items and Sites within the Local Environmental Plan, after the *Register of Significant Trees* has been reviewed and revised.
- Ensure recognition and consideration of significant trees in assessment of development applications.
- Ensure that the Street Tree Database and *Register of Significant Trees* are readily available to all Council officers concerned with any aspect of tree maintenance and management.
- Investigate the need for specialist advice to develop the framework for nominated trees to be included in the Register.
- All relevant Development Control Plans to be updated to recognise the *Register of Significant Trees* as a requirement of assessment of existing vegetation.
- Ensure that the *Register of Significant Trees* is easily available to the public, both in hard copy and on Council's web site.

2 Heritage listed trees

The following lists represent the species, and in some instances actual specimens, that are listed as significant and/or of heritage value in Waverley.

From the *Register of Significant Trees*:

Ficus macrophylla (Moreton Bay fig)

Ficus rubiginosa (Port Jackson Fig)

Ficus 'Hilli' (Hills Fig)

Phoenix canariensis (Canary Island Date Palm) – major problem with Fusarium Wilt

Washingtonia filifera (American Cotton Palm) – major problem with Fusarium Wilt

Washingtonia robusta (Washington Palm) – major problem with Fusarium Wilt

Araucaria heterophylla (Norfolk Island Pine)

Araucaria columellaris (Cook Pine)

Magnolia grandiflora (Southern Magnolia)





Image 28: A Norfolk Island pine of landmark significance.

Platanus x acerifolia (London Plane Tree)

Leptospermum laevigatum (Coastal Tea Tree)

Metrosideros excelsa (New Zealand Christmas Tree).

From the Waverley Heritage Study:

Casuarina equisetifolia (Drooping Sheoaks) in Francis Street, Bondi

Populus nigra (Lombardy Poplar) at St Catherine’s School and on Bondi Road.

Populus x serotina ‘Aurea’ (Golden Poplar) in Waverley Park

Quercus robur (English Oak) at St Catherine’s School

Pinus radiata (Monteray Pine) at St Catherine’s School

Erythrina sykesii (Coral Tree) at St Catherine’s School—Hazardous

Cinnamomum camphora (Camphor Laurel) at St Catherine’s School and in Flood Street, Bondi—Invasive

Olea europaea (Common Olive) at Waverley College—Invasive

Araucaria cunninghamii (Hoop Pine) in Centennial Park

Castanopsermum australe (Black Bean Tree) in Waverley Park

Lophostemon confertus (Box Brush).

Trees on Remnant Land in the south-west corner of the former Eastern Suburbs Hospital, York Road:

Eucalyptus botryoides

Persoonia lanceolata

Banksia integrifolia.

3 Procedures for listing

Listing trees on the Register does not necessarily prohibit work on or removal of the tree. Listing is not compulsory, but follows a clear process of application. In devising a registration process for significant trees, the following should be considered:

- residents and rate-payers, both government and private, are invited to nominate their trees for inclusion in the *Register of Significant Trees*. Significant trees may be either classified as a single tree or a larger grouping of trees
- no fee should apply to the registration process
- the application form should include the address of the tree/s, species, age, map of location, nominee’s details and relation to subject tree/s
- categories of significance are to be detailed within the broad six categories of botanic and horticultural, historic, cultural, scientific, aesthetic, ecological
- the nominator is to be notified within two weeks of receipt of nomination. Nearby prop-



erty owners are to be notified, allowing a four week period for submissions. Council officers may submit objections and comment

- a Council inspection is to be conducted. Possible expert advice may be sought, referring to most of the criteria listed under Arboricultural Report elsewhere in this document
- a Council officer will report on the tree's significance. The report should include the criteria for assessment, the finding, and what evidence was used to reach this finding, such as reports, photos, newspaper articles, archival material, and oral evidence from relevant public authorities, local property owners, local history and community groups
- all interested parties are notified of approval or disapproval
- if there are no objections, and the application for registration is recommended for approval, this is reported to Council for placement on the Register
- if there are objections and the registration is recommended for approval, the objections are assessed by a panel of experts
- the finding of the panel of experts is reported to Council
- affected parties may address Council
- all interested parties are notified of Council's finding.

The expert panel should have experience and qualifications to assess trees and should include people with expertise in that aspect of heritage, such as heritage officers, town planners, botanists and historians, depending on the particular types of trees nominated. The panel should be voluntary and paid, over a two-year period, to promote members who are keen and fresh.

Useful data for the applicant includes Council's local history collection, the *Register of Significant Trees*, the *Soil Landscapes of the Sydney 1:100 000 Sheet* (Chapman & Murphy, 1980), the *Action Plan for Local Government* (Green Web Sydney, 2004) and the *Endangered Ecological Community Information* (NPWS).

3.1 RESPONSIBILITIES AFTER REGISTRATION

Trees on the *Register of Significant Trees* need responsible care. It is the owner's responsibility to:

- to maintain and preserve the tree/s
- notify Council of routine pruning work
- if proposed for removal, apply for a Tree Preservation Order for consent, including Arborist's report
- submit to Council the name of any nominated operative undertaking any proposed work on the tree/s.

It is Council's responsibility to:

- automatically reassess trees every five years and consider the condition and continuing fitness of the trees in terms of criteria for inclusion
- notify the owner and automatically process approval, where it is considered that the tree is in need of work within the five years
- ensure Council officers inspect for compliance with tree protection measures any site containing a significant tree and the subject of a Development Consent, regardless of the principle certifying authority appointed.



3.2 CATEGORIES OF SIGNIFICANCE

Botanic and Horticultural:

- remnant tree
- significant contribution to a flora and fauna habitat or corridor
- source of propagation seed stock
- unusual growth form.



Image 29: A tree with significance associated with a heritage site.

Historic significance:

- particularly old or venerable
- commemorating or associated with important historic event
- part of a recognised historic garden, park or town
- associated with an important historic person.

Cultural:

- of Aboriginal or indigenous significance
- associated with a well-known public figure or ethnic group
- significant contribution to the landscape character of its location, including landmark trees

Scientific:

- rare to the area
- of a rare species or variety generally.

Aesthetic:

- outstanding visual or aesthetic qualities
- outstanding for its size, height, trunk, and/or canopy
- exhibits a curious growth form or physical feature.



Image 30: A group of trees at Diamond Bay Reserve of ecological/habitat significance.



Ecological:

- part of an ecologically significant community or indigenous habitat
- source of indigenous seedstock.

STRATEGY

Ensure an up to date contemporary *Register of Significant Trees*.

ACTIONS

- Include all significant trees in Schedule 5 of the *Waverley Local Environment Plan 1996*.
- Carry out a review of the *Waverley Register of Significant Trees* to ensure consistency with NSW Heritage Council and National Trust recommended criteria for significance.
- Review and update the *Register of Significant Trees* in accordance with the revised criteria, through an initial review, followed by a program of regular review of listed trees and assessment of newly nominated trees.
- Clarify Council and owner's responsibility for the management of a significant tree.
- Invite and assess applications for registration in accordance with procedures detailed in this TMP.
- Ensure that significant trees occurring on a site are referenced in all relevant property descriptions including, in particular, Section 149 Certificates.

Glossary of Terms

Biological diversity

Often commonly referred to as biodiversity, referring to a variety of species, usually of trees. It may also mean a variety of different plant communities.

Bushcare/bush regeneration

Bushcare is a community-based initiative combining Council resources, community volunteers and trained bush regenerators to restore, protect and enhance remnant bushland areas in Waverley.

Canopy cover

The covering of the earth's surface in any given place or region by the totality of tree and shrub canopies as viewed from above. Often expressed as a percentage and used to measure the urban forest.

Character, Local

The particular characteristics of a place as identified by its built form, vegetation, history and community. Often synonymous with identity.

Controls, Council

Council documents created to control land use within the council area and administered by the Council.

Corridors, Habitat

Corridors that join places of habitat suitable for creatures (fauna), and along which they travel in relative safety.

CPTED

Crime Prevention Through Environmental Design. The design of environments with consideration to preventing or minimising opportunities for crime within their spaces.

DCP

Development Control Plan. A council-approved document detailing objectives and criteria for the design of the built environment. Unlike a Local Environmental Plan (or LEP), the DCP does not have the legal standing of State legislation.

ESD

Ecologically Sustainable Development. According to the Brundtland Report of 1987, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This encompasses environmental, social and economic considerations.

Establishment

With respect to the planting of flora, the establishment of plants involves the appropriate planting and nurturing of specimens usually until they no longer require extraordinary care or maintenance to survive.

Greening Masterplan

An overall tree planting strategy for the Waverley Council area that will be used to inform and integrate with local strategic and development control plans, Residential Character Studies, Plans of Management and key projects such as GreenLinks.



Habitat networks

Usually within a given region, the total habitat patches used by creatures together with the corridors along which they migrate.

Hazardous tree

For the purpose of this document a hazardous tree is one that has partially fallen or has structural defects (i.e. advanced decay, split trunk) that could result in the immediate danger of the tree falling or collapsing.

Heritage tree

Defined by the Burra Charter as trees “worth keeping because they enrich our lives—by helping us understand the past; by contributing to the richness of the present environment; and because we expect them to be of value to future generations”.

LEP

Local Environment Plan. Council-drafted State legislation which, in similar mode to a DCP, contains objectives for the development of the built environment. It typically contains broad principles, zones of specific types of land use and schedules of such elements as heritage items.

Locally provenanced seedstock

Seeds for planting taken from locally indigenous specimens.

Native fauna

The animal population indigenous to the local area. See ‘native’ trees below.

‘Native’ trees

Is generally used here interchangeably with ‘locally indigenous’ which generally means it was found in Waverley prior to European settlement, although it is often extended to include the region of the eastern suburbs of Sydney.

Operational procedures

In relation to trees in Waverley, refers to the establishment, maintenance and repair work carried out by or on behalf of Council with respect to trees or the impact of trees on the environment.

Park tree

Park trees are those found in Waverley’s public open space, including natural areas (such as bushland, wetland, foreshore, cliff-face and watercourse), sportsgrounds, reserves and areas of general community use.

Remnant vegetation

Refers to locally indigenous vegetation occurring naturally, either since prior to European development or can be directly traced to pre-European vegetation.

Service provider

Utilities that provide infrastructure such as water, sewerage and telecommunications.

SULE

Safe Useful Life Expectancy of a tree. The life expectancy of a tree is defined as how long it is a safe and useful tree. This is firstly a result of its age, health, condition, safety and location. It is also a product of economics or the cost of upkeep, its effect on better trees nearby and sustained amenity. SULE Ratings typically plot the health of the tree along the Y-axis against the length of SULE along the X-axis. Any SULE system that is methodical and transparent is acceptable.

TPO

Tree Preservation Order. An order made by Council in Clause 39 of *the Waverley Local Environmental Plan 1996* and backed by State legislation (Clause 8 of the *Environment Planning and Assessment Model Provisions 1980*), designed to protect trees from unregulated pruning, lopping and removal.

Tree

Within the Waverley Local Government Area, the Tree Preservation Order defines a tree as that which has a:

- Height of four metres or over; or
- Canopy spread of four metres or over; or
- Trunk width of 300 millimetres or over at one metre above ground level; or
- Listing on the *Waverley Register of Significant Trees*.

Zone, zoning

Zones, as referred to in the *Waverley Local Environmental Plan 1996*, are mapped areas within the Local Government Area that specify what kind of land use is permissible and not permissible in that zone. Zoning usually also relates to the density of land use, and zones may be subdivided into more specific land use types and densities.

These definitions informally reflect the use of words found within this document and are not an attempt to create universally agreed-upon dictionary definitions.



References

- American Forests (2003), *What is the National Urban Tree Deficit and why do we care?* [Internet], Washington, DC 20013, American Forests. Available from: www.americanforests.org/graytogreen/treedeficit/ [Accessed 5 November 2004].
- Australia Standard AS 4373-1996, *'Pruning of Amenity Trees'*. Sydney, Standards Association of Australia.
- Australian Heritage Commission (1991), *Parks, Gardens & Special Trees – A Classification Method for the Register of the National Estate*. Technical Publication Series No. 2.
- Benson, D. and Howell, J. (1990), *Taken for Granted – The Bushland of Sydney and its Suburbs*. Sydney, Kangaroo Press.
- Cameron, D. (1985), 'Trees and Foundations'. In *CSIRO Division of Building Research Information Service*. Victoria, CSIRO Australia, Sheet No. 10-75, Revised September.
- Chapman, G.A. & Murphy, C.L. (1980), *Soil Landscapes of the Sydney 1:100.000 Sheet*. Sydney, Soil Conservation Service of NSW.
- Clark, R. (1996), *Purchasing Landscape Trees: A Guide to Assessing Tree Quality*. NATSPEC Guide 2, Construction Information Systems Australia Pty Ltd: Sydney.
- Draper, D. (1997), *'Pseudo-street Trees: A Concept'*. In *Australian Arbor Age*, Vol. 2, No. 3, pp 6-10.
- Energy Australia (2002), *'Tree Safety Management Plan'*. Energy Australia.
- Energy Australia (2002), *Trees and Powerlines*, [Internet], Available from: www.energy.com.au [Accessed 14 November 2004].
- Fakes, J. (n.d.), *'Tree Care and Maintenance Notes'*. TAFE Certificate IV Horticulture (Parks & Gardens), Ryde NSW, unpublished.
- Fakes, J. (1992), *'Arboriculture and Tree Care and Maintenance Notes'*. TAFE Certificate by correspondence, unpublished.
- Fleming's Nursery (2002), *'Designer Trees'*, [Internet], Available from: www.flemings.com.au/privacy.asp?ref=http://www.flemings.com.au/new/ornamentals/pages/designer.asp [Accessed 14 November 2004].
- Harris, R. (1992), *Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines*. Second Ed. Prentice-Hall, N.Y.
- Hitchmough, J. (1994), *Urban Landscape Management*. Sydney, Inkata Press.
- Hornsby Shire Council (1996), *Parks and Reserves; Generic Plan of Management*. Hornsby, Hornsby Shire Council.
- Institute for Sustainable Futures (2004), *Waverley Council's Built Form Planning Instruments: A Gap Analysis*. Sydney, UTS.
- Kane, B., Dennis, H., Ryan, P., Bloniarz, V. (2001), 'Prioritising Risk Trees in a Community', in *Tree Care Industry* [Internet], July Edition, Available from: www.natlarb.com/ [Accessed 21 October 2002].
- Keys Young & Tempe Macgowan Associates (1999), *Bondi Junction Commercial Centre; Design Framework*. Sydney, Waverley and Woollahra Councils.
- Lane Cove Council, *Tree Preservation Order*, [Internet], NSW, Lane Cove Council. Available from: www.lanecove.nsw.gov.au/CouncilServices/TreeManagement/PrivateTrees/TreePreservationOrder/TreePreservationOrder.htm [Accessed 25 October 2004].

Local Government Association of NSW (2003), *Urban Forest Policy*, [Internet], NSW. Available from: www.lgsa.org.au/docs/policystatement/LGAPolStat03.pdf [Accessed 26 October 2004].

Nicoll, B. (2002), 'Root Cause of Sidewalk Damage'. In *Tree Care Industry*, [Internet], February 2002 Ed. Available from: www.natlarb.com/ [Accessed 14 November 2004].

National Parks & Wildlife Service (NSW), *Endangered Ecological Community Information*, [Internet], NSW. Available from: www.nationalparks.nsw.gov.au/PDFs/EECinfo_Eastern_Suburbs_banksia_scrub.pdf [Accessed 28 October 2004].

National Trust (2004). <http://nationaltrust.org.au> [Accessed 24 October 2004].

Ondinea, Danie (1996), *Wildlife Habitat Corridor Study for Waverley Council*. NSW.

Penrith City council (2003), *Penrith draft Biodiversity Study*, [Internet], NSW, Penrith City Council. Available from: www.penrithcity.nsw.gov.au/webuploadedFiles/DraftPenrithBiodiversityStrategy.pdf [Accessed 24 October 2004].

Pittendrigh Shinkfield Bruce (2004), *Burwood Council Street Tree Management Plan*. (2 vols), Sydney, PSB.

Quambusch, L. (1996), 'Root Barriers: Preventing Damage to the Urban Environment'. In *Australian Arbor Age*. Vol. 1, No. 3, pp. 18-21.

Randwick City Council website (2003-2004), incl. *Randwick Street Tree Master Plan*: [Internet], Green Web Sydney, Available from: www.Randwick.nsw.gov.au [Accessed 20 September 2004].

Randwick City Council (2003-2004), *Environmental Weeds*, [Internet], Green Web Sydney, Available from: www.randwick.nsw.gov.au/council_services/greening_our_city/weeds/envWeeds.php [Accessed 20 September 2004].

Ryde City Council (2001), *Tree Preservation Order*, [Internet], NSW, Ryde City Council. Available from: www.ryde.nsw.gov.au/pdf/treepolicy.pdf [Accessed 10 November 2004].

Ryde City Council (2003), *Significant Tree Register*, [Internet], NSW, Ryde City Council. Available from: www.ryde.nsw.gov.au/pdf/signtreeregister.pdf [Accessed 10 November 2004].

Ryde City Council (2004), *Arborist Reports*, [Internet], NSW, Ryde City Council. Available from: www.ryde.nsw.gov.au/pdf/info_arboristreports.pdf [Accessed 10 November 2004].

Seidlich, Birgit, (1997), *Green Web – Sydney; A Vegetation Management Plan for the Sydney Region; Summary of Native Vegetation Communities of the Sydney Region*. Sydney, Sydney Regional Organisation of Councils.

Sydney Regional Organisation of Councils (n.d.), *Local Native Plants for Sydney's Eastern Suburbs*. Sydney, Natural Heritage Trust and Green Web Sydney.

Statewide (n.d.), *Best Practice Manual; Trees & Tree Roots*, [Internet], NSW. Available from: <http://statewide.nsw.gov.au> [Accessed 28 October 2004].

Wainwright, R. (2001), 'Carr's clear vision Plan: Bury city's Power Lines'. *Sydney Morning Herald*. 29 November 2001, p.1.

Walsh, P. (1988), 'Guide to Home Owners on Foundation Maintenance and Footing Performance'. In *CSIRO Division of Building, Construction and Engineering Information Service*. Victoria, CSIRO Australia, Sheet No. 10-91.

Warringah Council (2004), *Trees in Warringah*, [Internet], Warringah Council, NSW, Available from: www.warringah.nsw.gov.au/tree.htm [Accessed 25 October 2004].

Waverley Council (1988), *Remnant Vegetation in Waverley*. NSW, Waverley Council.

Waverley Council (1990), *Waverley Heritage Study*. NSW, Waverley Council.



- Waverley Council (1993), *Register of Significant Trees*. NSW, Municipal Engineer-Waverley Council.
- Waverley Council (1996), *Waverley Local Environment Plan 1996*. Sydney, Minister of Urban Affairs and Planning.
- Waverley Council (1998), *Development Control Plan No.1 – Multi-unit Housing*. NSW, Waverley Council.
- Waverley Council (2004), *Draft Development Control Plan No.2 – Dwelling House & Dual Occupancy*. NSW, Waverley Council.
- Waverley Council (1997), *Development Control Plan No.18 – Heritage Conservation*. NSW, Waverley Council.
- Waverley Council (n.d.), *Development Control Plan: No.21 – 197 Birrell Street*. NSW, Waverley Council.
- Waverley Council (07/07/2001), *Report to Community Service, Health & amenities Committee: Pruning for Electricity Line clearance by Energy Australia Contractors*. NSW, Beach Park and Recreational services.
- Waverley Council (2002), *2002-2005 Waverley Management Plan; Appendix*, [Internet], NSW, Waverley Council. Available from: www.waverley.nsw.gov.au/publications/mgmtplan/2002/appx2/index.html [Accessed 25 October 2004].
- Waverley Council (2002), *Tree Management Plan – Planting Policy (345-8(3)) – Motion/ Decision. Council Meeting, 23 July 2002*, NSW, Waverley Council.
- Waverley Council (2003), *Drain Blockage Policy*. NSW, Waverley Council.
- Waverley Council (2004), *Bondi Junction Strategic Plan - Guiding us to a stronger future*. NSW, Waverley Council.
- Waverley Council (n.d.), *Small Parks Plan of Management*. NSW, Waverley Council.
- Waverley Council (n.d.), *Waverley Tree Planting & Protection Plan – Discussion Paper*. NSW, Waverley Council.
- Waverley Council (n.d.), *Plants Native to Waverley*, [Internet], NSW, Waverley Council. Available from: www.waverley.nsw.gov.au/council/bprs/parks/parks/native.html [Accessed 25 October 2004].
- Waverley Council (n.d.), *Waverley Transportation Policy*, [Internet], NSW, Waverley Municipal Council. Available from: www.waverley.nsw.gov.au/publications/transport/index.html [Accessed 25 October 2004].
- Waverley Council & Woollahra Municipal Council (2000) *Technical Manual ...for use in the Bondi Junction Commercial Centre*. NSW, Waverley and Woollahra Councils.
- Winstone, I (n.d.), *Tree Root Damage*, [Internet], Available from: www.global-Garden.com.au/burnley/oct98dte.htm [Accessed 14 November 2004].
- Woollahra Council (2000), *incl. State of the Environment reports*: [Internet], NSW, Woollahra City Council. Available from: www.Woollahra.nsw.gov.au [Accessed 20 September 2004].