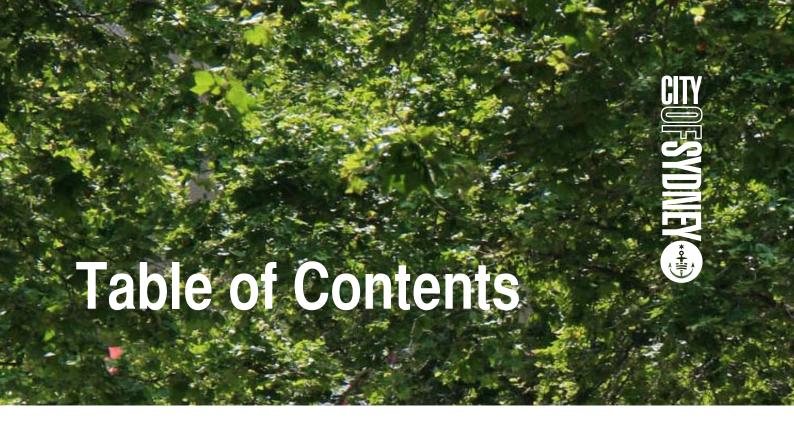


# Street Tree Master Plan 2011



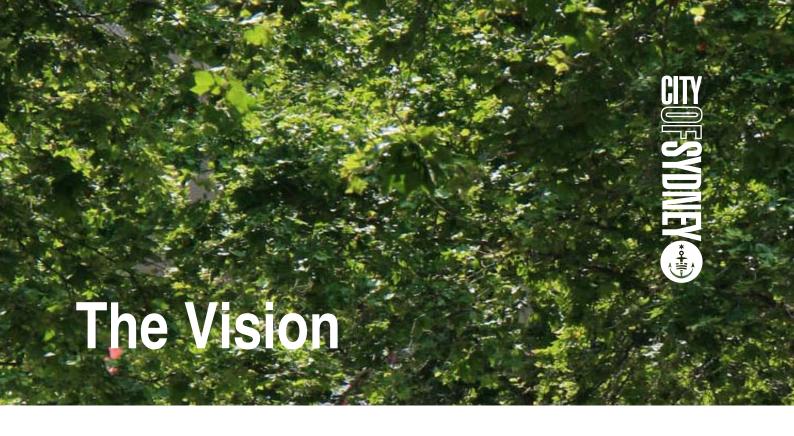


The Vision	V
Part A	
Introduction  1. How To Use This Plan 2. Context 3. The Many Benefits of Street Trees 4. Key Objectives 5. Who Will Use This Plan 6. The Document Structure 7. The Street Tree Policy Documents 8. Other Council and Community Documentation	A-1 A-3 A-8 A-9 A-9 A-9 A-9
Part B	
Tree Species Selection  1. How We Have Selected Our Street Trees 2. The Right Tree For The Right Location 3. Environmental Selection Criteria 4. Functional Criteria 5. Aesthetic / Design Criteria 6. Other Factors Impacting on Street Tree Selection and Establishment 7. No Street Tree is Perfect 8. Streetscape Design Principles 9. In-road Planting Opportunities 10. Mixed Species Street Planting 11. Urban Renewal Areas 12. Future Pest and Disease Impacts 13. Street Tree Species Listing	B-1 B-1 B-2 B-6 B-7 B-8 B-9 B-10 B-12 B-16 B-16 B-17

## Part C

Precinct Plans C-1
1. King Street Wharf and Walsh Bay C-3
2. The Rocks & Millers Point C-5
3. Northern Financial & Alfred St C-7
4. Western Commercial C-9
5. Retail Centre & Martin Place C-11
6. Town Hall & Mid City
7. Haymarket C-15
8. Southern CBD C-17
9. Surry Hills North
10. Surry Hills South
11. Redfern West C-23
12. Redfern East C-25
13. Chippendale C-27
14. Ultimo C-29
15. Pyrmont C-3
16. Darlington
17. Camperdown & Forest Lodge C-38
18. Glebe West
19. Glebe East C-39
20. Glebe Point C-41
21. Darlinghurst C-43
22. Elizabeth Bay
23. Woolloomooloo C-47
24. Moore Park and Paddington C-49
25. Rosebery C-51 26. Green Square C-53
26. Green Square C-53 27. Newtown C-53
28. Erskineville C-57
29. Alexandria C-59
30. Southern Industrial C-6
Part D
Technical Guidelines D-1
1. Technical Guidelines Overview D-1
2. Trees in Footways Guidelines D-1
3. Street Tree Supply Specification D-2
4. Street Tree Soil Specification D-4
5. Street Tree Installation Specification D-12
6. Tree Establishment and Maintenance D-14
7. Tree Planting Details D-15
8. Existing Street Tree Protection Measures During Construction D-24
Part E
Appendices E-1
1. Tree Data Sheets E-1
2. In-road Planting Opportunities E-72
3. Road Hierarchy E-75
4. Bibliography E-76





The best time to plant a tree was 50 years ago. The second best time is right now.

Chinese Proverb



Street trees are one of a city's most important natural assets. They are crucial to maintaining the high quality of our public realm and achieving the Sustainable Sydney 2030 strategy, by assisting the creation of green corridors and increased canopy cover.

The Street Tree Master Plan 2011 is a blueprint for the provision of street trees across the City of Sydney. The objectives of this Master Plan are to improve and develop the number, health, longevity and form of street tree species; and to enhance the distinct character of the various City precincts.

With this Master Plan, our City will continue to provide healthy street trees which will beautify our urban environment today and will become a legacy for future generations.

**Cr Clover Moore** Lord Mayor





#### 1. How To Use This Plan

This document is one part of the City's suite of documents used to proactively manage its tree resources. Trees like all living things, grow, age and eventually die. It is therefore important that the City has a strategy and a plan to deal with all its street trees, where they are planted and what species are to be used to replace trees when they eventually reach the end of their useful life. In short, this document is intended to guide **future** street tree planting.

The general rule the City has followed in developing this plan is to continue the existing street characters and tree planting as much as possible, unless there are specific problems to address or opportunities for improvement. The City will seldom remove a healthy street tree. Because a certain type of tree is proposed for a street, it does not mean that the City will remove the existing street trees to implement a new species. This will only happen over time, as trees need replacing.

Existing trees will normally be left to grow for their natural life and they will only be removed once they have become a safety issue and an unacceptable hazard. The exception to this might be when major street improvements or upgrade works are required. However, tree removal will always be a "last resort option".

As a member of the community, the way you might use this plan is outlined below.

- 1. Read Part B **Tree Species Selection** to understand the many complex considerations involved in selecting a street tree.
- 2. Refer to Part C which has a map of the entire City of Sydney area and **identify the precinct** that your street lies within.
- Once you have located the precinct in which your street lies, you should then refer to that precincts summary page and precinct map in Part C. The map will show what species of trees are proposed for each street within the precinct.
- 4. If you are unfamiliar with the tree species, you may want to refer to Part E at the end of the document where a brief Tree Data Sheet is provided for all the trees proposed, giving a photograph, a brief description of the trees and outlining their key features.

We hope you find this document useful and share our passion in making Sydney a green and beautiful City.



#### 2. Context

The City of Sydney Local Government Area covers approximately 26.15 square kilometres with a population of 177,000 people.

Given its location as the economic and cultural heart of the Sydney metropolitan area, our area is densely urbanised. As the oldest city in Australia the built form dates from early 1800s and includes many items of historic and heritage value.

In general the City of Sydney consists of three distinctive development and street types that present opportunities and a variety of challenges for street tree planting.

- · The inner city and CBD area
- · The residential areas
- · The industrial and commercial areas.

#### The CBD and inner city areas

The CBD area with its predominantly high rise buildings can create harsh conditions for street trees due to excessive overshadowing, wind tunnel effects, radiant heat from pavements, and high levels of pollution from vehicle emissions. In some streets building awnings and other overhead structures can prevent or limit tree planting.

#### Residential areas

The residential areas contain a variety of architectural styles and building types ranging from traditional Victorian and Federation architecture, to modern, medium density housing developments.

Suburbs such as Glebe, Newtown, Surry Hills and Darlinghurst incorporate fine grain street patterns and allotment sizes that enhance the historic character and create streetscapes that are defined and have a sense of enclosure.



Figure 1 - Despite the harsh conditions, trees in the CBD humanise the space and contribute greatly to the amenity of the city. (Photo. Arterra)



Figure 2 - Sydney, a beautiful city, but one with many diverse and challenging areas for street tree establishment, from harbourside, to high rise towers through to small terrace house lined laneways and large scale industrial complexes in the southern areas. (Photo. Arterra)



Figure 3 - Pitt Street in the CBD - Planting anything can present serious challenges in a city environment. (Photo. Arterra)

The building alignments of these older residences are often located on the boundary with relatively narrow footpaths. This raises issues of tree location, solar access, and pedestrian egress when planning for street trees.

Other suburbs such as Rosebery and Moore Park consist predominantly of single storey houses on large blocks with generous setbacks from the street.

Green Square, Pyrmont and Ultimo are major urban renewal areas with the conversion of previous industrial and residential uses into medium density residential.

These areas often provide the opportunity to plan for the successful establishment of new street trees as part of the public domain planning and development consent process.

#### Southern industrial area

The southern part of our City, that includes the suburbs of Alexandria, Rosebery and St Peters, consists predominantly of large industrial blocks with a coarse grain street network.

The generous setbacks of many of these developments allow the opportunity to establish larger trees as well as using consent conditions to include additional rows of trees within the private frontages.



Figure 4- There are many grand and historic homes throughout our older areas such as Glebe and Darlinghurst (Photo Arterra)



Figure 5-Terrace houses are a common housing type throughout the city. (Photo Arterra)



Figure 6- The Sydney CBD is characterised by tall buildings, awnings, busy streets and pedestrian footpaths (Photo Arterra)



Figure 7- Surry Hills and Redfern are fine-grained and diverse areas with a mixture of commercial, residential and retail development. (Photo Arterra)



Figure 8- The southern areas of Alexandria and Rosebery often contain the larger scale industrial and commercial complexes and broad grained street patterns. (Photo Arterra)



Figure 9- Areas like Rosebery and Moore Park contain very traditional suburban housing on larger lots. (Photo Arterra)



Figure 10- Areas such as Green Square are being redeveloped into master planned medium density residential communities (Photo Arterra)



Figure 11- Baptist Street Redfern - The great streets of the future are dependent on how we plan our street planting today. (Photo Arterra)

Street tree planting is a very significant component of the physical makeup and appearance of our streets and is a critical factor in our overall impression of the public domain. The most significant factor that often makes "a place" is often its street tree planting.

Trees have the ability to transform a street and create definition within a street. They can be just as important as the built forms in many locations.

Interestingly, most "great streets" commonly have evenly and closely spaced trees. The use of a single species usually has the greatest impact on people's positive perception of the street. Deciduous trees are also often considered more appropriate for inner city streets as they permit sun light to reach the streets in winter.

For these reasons the City of Sydney has committed the time and resources to the creation of a Street Tree Master Plan to provide a co-ordinated and strategic approach to its street tree planting activities.



Figure 12- Street trees are a vital component of our urban environment - they are core components of our valuable green infrastructure providing many environmental, economic, social, psychological and aesthetic benefits. (Photo Arterra)

## 3. The Many Benefits of Street Trees

Street trees are a vital urban element that can transform the City's streets and provide numerous environmental, aesthetic, cultural and economic benefits. In the long term, they create a "sense of place" and enhance the public domain. Trees are on the job 24 hours every day working for all of us to improve our environment and quality of life.

Some of the **environmental** benefits of street tree plantings include:-

- Carbon sequestration and storage. A single mature tree can absorb carbon dioxide at a rate of 21 kg/year and release enough oxygen back into the atmosphere to support 2 people's needs.
- Shading of pavement, cars and buildings, thereby reducing our energy consumption. Shading of asphalt pavements can also extend its life.
- Removal of many gaseous pollutants by absorbing them with normal air components through the stomates in the leaf surface. (eg. Sulfur Dioxide, Ozone, Nitrogen Oxide)
- They also capture and remove particulate matter and dust from the air.
- Acting as natural pollution filters. Their canopies, trunks, roots, and associated soil, filter polluting particulate matter out of the flow away from the stormwater and creeks. Reducing the flow of stormwater reduces the amount of pollution that is washed into a drainage area. Trees also use nutrients like nitrogen, phosphorus, and potassium which can otherwise pollute streams.
- Intercepting and reducing rainfall and runoff and reduced erosion of soils.
- Providing habitat and a food source for urban fauna.



Figure 14- Street trees play a valuable role in softening and screening the bulk and scale of the industrial precinct development (Photo Arterra)



Figure 13- Well treed streets can have many positive economic benefits attracting people to shop and dwell longer. (Photo Arterra)

Some of the **economic** benefits of street tree plantings include:-

- Improving economic performance by increasing the attractiveness of businesses and tourism areas. People typically linger, shop and dine longer in tree-lined streets.
- Reducing energy consumption, through shading and reductions in the "urban heat island" effects.
- Shops, apartments and housing in well planted areas usually attract high rents and sale prices.

Some of the **social and psychological** benefits of street tree plantings include:-

- Calming traffic, slowing speeds, and providing a buffer between pedestrians and cars. They are also useful in delineating and signifying curves in a street.
- Improved sociological benefits with studies showing correlation of well planted areas with reduced social services, domestic violence, and strengthened community ties.
- Creation of feelings of relaxation and well-being. Hospital
  patients, for example, are shown to recover quicker and
  with fewer complications when in rooms with views of
  trees. Workers and students are also shown to be more
  productive when their environments have views to trees.
- Improving comfort and amenity as street tree canopies can shade pedestrians, diminish traffic noise, screen unwanted views and reduce glare.
- Defining precincts and links with history. Tree lined streets can provide orientation, and contribute to the city's character.
- Providing a human scale that contrasts with the towers and large buildings that dominate some city streets.
- Providing seasonal interest and natural beauty through foliage and their interesting leaf patterns, flowers, bark, fruit and canopy.
- Providing a link to nature and a source of delight.

## 4. Key Objectives

The key objectives of the Street Tree Master Plan 2011 are to:-

- Direct the most appropriate species and planting techniques for the many potential tree sites in Sydney -'the right tree for the right location'.
- Establish a street tree species palette suited to the environmental conditions of the City of Sydney's public realm.
- Reinforce and enhance the special characteristics of city precincts using distinct street tree planting.
- Increase the number of trees and canopy coverage in Sydney's streets.
- Establish green city corridors by providing high quality street trees.
- · Improve street tree establishment and survival rates.
- Guide the maintenance and management of existing and new trees to ensure that they survive and thrive in the harsh urban conditions.
- Provide clear guidelines to ensure a consistent approach towards the provision of street trees in the City of Sydney.

#### 5. Who Will Use This Plan

The Street Tree Master Plan 2011 is intended for use by:-

- City of Sydney staff as a guide for the provision and management of street trees within the City's public domain.
- Landowners and developers- to assist in the selection and installation of tree species.
- The general public to foster a better understanding of the desired street tree character for city precincts.

#### 6. The Document Structure

The Street Tree Master Plan 2011 provides a guide to the provision and planting of street trees throughout the City of Sydney. The Master Plan consists of the following sections:-

- A Introduction context and document objectives.
- B Species selection including tree selection criteria, and critical design principles.
- C Precinct Plans nominates the tree palette and design objectives for each precinct.
- D Technical Guidelines indicates tree set out, tree planting and surrounding details and specifications.
- E Appendices includes tree data sheets, road classification lists, bibliography.

### 7. The Street Tree Policy Documents

The Street Tree Master Plan 2011 is part of the City of Sydney Tree Management Policies, which will provide the necessary tools to effectively manage street trees in our area. The Tree Management documents comprise:-

Volume 1 Urban Tree Management Policy
Volume 2 Tree Preservation Order
Volume 3 Street Tree Master Plan
Volume 4 Register of Significant Trees

Figure 16 shows the relationship between the City of Sydney's tree management documentation.



Figure 15- George Street, one of Sydney's grand boulevards. (Photo Arterra)

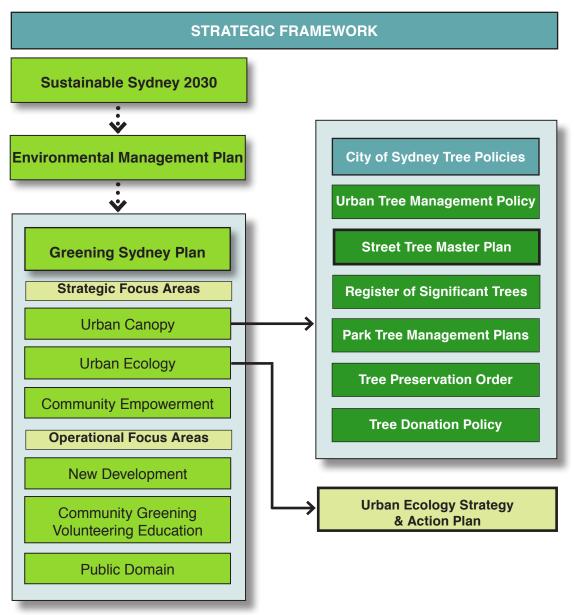


Figure 16- Strategic framework diagram

# 8. Other Council and Community Documentation

The Street Tree Master Plan 2011 has been considered in relation to many other existing and draft Council policies that will influence the future pattern and development of our streets. This has included documents such as:-

- Sustainable Sydney 2030
- Draft Sydney Development Control Plan;
- Cycle Strategy and Action Plan;
- City of Sydney Community Gardens Policy;
- · China Town Public Domain Plan;
- · Integration of Water Sensitive Urban Design in Footpaths;

- City of Sydney Urban Ecology Strategic Action Plan;
- · Liveable Green Network 2010 (Draft);
- Urban Forest Policy (Draft).

Many of these documents have very compatible objectives and will complement this Plan. Likewise the implementation of many of the objectives and strategies contained in this Plan will enhance the realisation of the other policies, particularly by:-

- · Increasing planting opportunities within the City;
- · Increasing the canopy coverage of the City;
- Reinforcing the primary green corridors within the City;
- Increasing the use of native tree species.



