

# **GENERIC PLAN OF MANAGEMENT**

## **NATURAL AREAS**

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**Hurstville City Council**

Adopted by Council at its meeting held 27 February 2008.

# **Generic Plan of Management**

## **NATURAL AREAS**

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## **1.0 Introduction**

### **1.1 General Information**

Hurstville City Council is responsible for the interests of some 76,036 (at June 2005) (ABS (preliminary)) people, over an area of 24.69km<sup>2</sup>. The management of open space and recreation areas (parks and reserves) is one of the most important functions of any Council. Council is involved in the care, control and management of 159 parcels of community land and other open space which together offer a large and diverse range of recreational opportunities. These open space sites tally 248 hectares, which is equivalent to 10% of the total Council area, and a significant investment and responsibility.

### **1.2 Land Classification and the Local Government Act 1993**

The Local Government Act 1993, herein referred to as the Act, required Council to undertake and maintain an inventory of all land owned by Council. This land was then to be classified as either:

1. Community Land, or
2. Operational Land

Community Land is defined for the purposes of the Act to be any land that is retained by Council for use by the general public, such as parks, playing fields, playgrounds, bushland, and other areas of open space accessible to the public. Development and use of this land is subject to strict controls set out in the Act. In addition to these controls, Councils must prepare Plans of Management for any land identified as Community Land during the classification process.

Operational Land comprises that land which serves a commercial or operational function (eg. a depot or car park), or land which is being retained for strategic reasons. The range of controls which apply to Community Land do not apply to the use and management of Operational Land.

In 1998, the Local Government Act 1993 was amended with respect to Community Land. This amendment resulted in the Local Government Amendment (Community Land Management) Act 1998 and subsequently the Local Government (General) Amendment (Community Land Management) Regulation 1999. The original Act required Councils to categorise all Community Land as either a park, sportsground, natural area or general community use area and to prepare a Plan of Management for all Community Land. However no further guidelines were provided to assist with the categorisation or management process. The amended Act has provided Councils with guidelines to ensure all community land is appropriately

categorised and managed in accordance with identified management objectives. These are described in the Act as core objectives.

#### **1.2.1 Community Land Classification**

Community land must also be categorised according to its function. Land is categorised into one of five categories, either:

- Park
- Sportsground
- General Community Use Area
- Area of Cultural Significance or
- Natural Area, which must be further categorised as either
  - Bushland
  - Escarpment
  - Foreshore
  - Watercourse or
  - Wetland.

Council does not have any areas of community land categorised as Area of Cultural Significance and therefore there is no plan of management for this category. There are also no sites declared as Natural Area – Escarpment, so the classification will not appear within this plan.

### **1.3 What is a Plan of Management?**

A Plan of Management (POM) is a document which provides a clear set of guidelines for the short and long term management of a parcel or groups of parcels of Community Land owned or managed by Council. A Plan of Management identifies and clarifies Council's goals and objectives and establishes the overall direction for planning, resource management and maintenance of the land. The Plan of Management also allows Council to set priorities when preparing Works Programs and related budgets.

A Plan of Management may be generic (ie. covering more than one area of Community Land) or specific (covering one area only). All of Council's parks and reserves have been addressed within one of the five generic Plans of Management (Parks, Sportsgrounds, Natural Areas, General Community Use, or Areas of Cultural Significance).

As a minimum requirement, a generic Plan must:

- categorise the land in accordance with the legislation
- contain objectives and performance targets for the management of the land
- specify the means by which Council proposes to achieve the objectives and performance targets, and
- specify how achievement of the objectives and performance targets is to be assessed.

Hurstville City Council's original Generic Community Land Plans of Management were adopted by Council on 26 June 1996. This document met the requirements of the Local Government Act 1993. However as a result of the amendments to the Act and Council's commitment to the provision of high quality open space both now and in the future, updated and more detailed plans have now been prepared.

### **1.3.1 About this Plan**

This Natural Areas Plan of Management is a generic Plan of Management and covers all Community Land categorised within Hurstville City Council as Natural Area. This Plan of Management lists all of the existing Natural Areas, although any specific plans that are prepared for particular sites take precedence over this Plan, for example, Oatley Park. Where there is any conflict between specific and generic Plans of Management, the specific Plan should be adhered to.

There are 33 parcels of land included in this Natural Areas plan, which contain a rich resource of local environmental heritage. The individual areas vary in size from small pocket reserves of less than 0.05 hectares in area to much larger consolidated reserves, many of which are several hectares in area. It also includes small road reserve areas that are managed and maintained as pocket parks. The total area of natural area open space is approximately 108.2 hectares (including the road reserve areas for which estimations of land areas have been made).

A Schedule of Land is attached as Appendix 1 which identifies all land categorised as Natural Area and managed in accordance with this Plan of Management. The Schedule includes areas of dual categorisation. This Schedule is as accurate as Council records allow at the time of writing. It may be added to or changed over time in accordance with the Local Government Act 1993 and Amendments. It should also be noted that some parcels of land listed in other Generic Plans of Management contain areas of bushland (Natural Areas). However, land parcels have been included in the respective Plans based on their dominant characteristics (ie. sportsground, park, etc).

### **1.3.2 Definition of a Natural Area**

The definition of a Natural Area as described in the Local Government (General) Regulation 1999 is land that is, or is proposed to be, improved by landscaping, gardens or the provision of non-sporting equipment and facilities, for use mainly for passive or active recreational, social, educational and cultural pursuits that do not unduly intrude on the peaceful enjoyment of the land by others.

### **1.3.3 Crown Land**

A number of Council's Natural Areas occur on Crown Land. Council manages this land in trust for the Crown, and while it is not classified as Community Land in accordance with the Act, Crown Land which is retained as a Natural Area will be managed in accordance with this Plan of Management. Council will work with the Department of Lands (responsible for the administration of

the Crown Lands Act 1989 (updated 2001) to ensure the appropriate management of the Crown Reserve System.

The principles of Crown Land management as described in the Crown Lands Act 1989 are:

- (a) that environmental protection principles be observed in relation to the management and administration of Crown land;
- (b) that the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible;
- (c) that public use and enjoyment of appropriate Crown land be encouraged;
- (d) that, where appropriate, multiple use of Crown land be encouraged;
- (e) that, where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity; and
- (f) that Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interest of the State consistent with the above principles.

#### **1.3.4 Road Reserves**

Several of Council's smaller open space areas have evolved on land designated as road reserve. These areas do not have identifying lot and Deposited Plan (DP) numbers, but do require the dedication of resources to maintain them. Some are large enough to support facilities such as playground equipment and seating.

The categorisation and inclusion of road reserves in a Plan of Management is therefore not required under the Community Land legislation. However as they are managed and maintained in the same manner as similar parcels of classified Community Land, it is appropriate to include them in this Plan.

#### **1.3.5 Core Objectives**

The Act subsequently identifies core objectives for the management of each category of community land. Natural Area is the predominant category for this Plan of Management, with the sub-categories of Bushland, Foreshore, Watercourse and Wetland all represented. The other generic categories of Park, Sportsground and General Community Use area are also represented in some of the dual or multiple use sites.

##### **Natural Areas**

Under Section 36(5) of the Act, Natural Areas are required to be further categorised as bushland, wetland, escarpment, watercourse or foreshore depending on the dominant character of the natural area. There are no areas classified as escarpment with the Hurstville LGA.

Bushland areas are terrestrial and contain primarily remnant native vegetation or a remainder of the natural vegetation of the land, or is representative of the structure or floristics of the natural vegetation in the locality.

Land is categorised as foreshore under section 36 (5) of the Act if the land is situated on the water's edge and forms a transition zone between the aquatic and terrestrial environment.

A natural area is sub-categorised as a watercourse if the land includes any stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel that has been artificially improved, or in an artificial channel that has changed the course of the stream of water, and any other stream of water into or from which the stream of water flows, and includes associated riparian land or vegetation.

Natural areas are to be sub-categorised as Wetland if the land includes marshes, mangroves, backwaters, billabongs, swamps, sedgelands, wet meadows or wet heathlands that form a waterbody that is inundated cyclically, intermittently or permanently with fresh, brackish or salt water, whether slow moving or stationary.

The core objectives for these four sub-categories are described as follows.

#### Natural Area - Bushland

The core objectives for the management of community land classified as bushland are:

- a. to ensure the ongoing viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and
- b. to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and
- c. to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and
- d. to restore degraded bushland, and
- e. to protect existing landforms such as natural drainage lines, watercourses and foreshores, and
- f. to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and
- g. to protect bushland as a natural stabiliser of the soil surface.

#### Natural Area – Foreshore

The core objectives for the management of community land categorised as foreshore are:

- a. to maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area, and
- b. to facilitate the ecologically sustainable use of the foreshore, and to mitigate impact on the foreshore by community use.

#### Natural Area – Watercourse

The core objectives for management of community land categorised as a watercourse are:

- a. to manage watercourses so as to protect the biodiversity and ecological values of the instream environment, particularly in relation to water quality and water flows, and

- b. to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability, and
- c. to restore degraded watercourses, and
- d. to promote community education, and community access to and use of the watercourse, without compromising the other core objectives of the category.

#### Natural Area – Wetland

The core objectives for management of community land categorised as wetland are:

- a. to protect the biodiversity and ecological values of wetlands, with particular reference to their hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of the wetlands, and
- b. to restore and regenerate degraded wetlands, and
- c. to facilitate community education in relation to wetlands, and the community use of wetlands, without compromising the ecological values of wetlands.

#### Park

The core objectives for management of community land classified as a Park are:

- a. to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and
- b. to provide for passive recreational activities or pastimes and for the casual playing of games, and
- c. to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

#### General Community Use

The core objectives for management of community land categorised as general community use are to promote, encourage and provide for the use of the land, and to provide facilities on the land, to meet the current and future needs of the local community and of the wider public:

- a. in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public, and
- b. in relation to purposes for which a lease, licence or other estate may be granted in respect of the land (other than the provision of public utilities and works associated with or ancillary to public utilities).

These objectives have been considered during the preparation of this Plan and in particular the development of the Plan objectives (Section 3).

The Act stipulates that where more than one category is used to define a portion of Community Land, the plan must clearly identify the land or parts of the land and the separate categories, by a map or otherwise. The Natural Areas maps (Appendix 3) are based on an aerial photograph layer from which

the differences in the zones may be visually detected by changes in site layout.

## **1.4 SEPP No. 19 - Bushland in Urban Areas**

The Environmental Planning and Assessment Act, 1979, made provision for the preparation of the State Environmental Planning Policy No. 19 -Bushland in Urban Areas, in 1986.

While large tracts of land have been set aside on the outskirts of Sydney in National Park, concern has been expressed at the decline in both the quality and quantity of the metropolitan area bushland. It is fortunate that a small portion of Sydney's natural bushland has been retained on land dedicated as public open space. The Policy has been designed to ensure that these areas are protected and preserved, and further urban bushland areas retained within the Sydney Region. The Policy does not apply to land administered by the National Parks and Wildlife Service, the State Forests of NSW, other statutory authorities or privately owned bushland.

Within this Parks Plan of Management, SEPP No. 19 applies to those areas with dual categorisation listed as part Natural Area (Bushland).

The aims and objectives of SEPP 19 are detailed below:

The general aim of this Policy is to protect and preserve bushland within the urban areas referred to in Schedule 1 because of:

- a. its value to the community as part of the natural heritage;
- b. its aesthetic value; and
- c. its value as a recreational, educational and scientific resource.

The specific aims of this Policy are;

- a. to protect the remnants of plant communities which were once characteristic of land now within an urban area;
- b. to retain bushland in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term;
- c. to protect rare and endangered flora and fauna species;
- d. to protect habitats for native flora and fauna;
- e. to protect wildlife corridors and vegetation links with other nearby bushland;
- f. to protect bushland as a natural stabiliser of the soil surface;
- g. to protect bushland for its scenic values and to retain the unique visual identity of the landscape;
- h. to protect significant geological features;
- i. to protect existing landforms, such as natural drainage lines, watercourses and foreshores;
- j. to protect archaeological relics;
- k. to protect the recreational potential of bushland;
- l. to protect the educational potential of bushland;

- m. to maintain bushland in locations which are readily accessible to the community; and
- n. to promote the management of bushland in a manner which protects and enhances the quality of the bushland and facilitates public enjoyment of the bushland compatible with its conservation.

## **1.5 Council's Management Goals**

### **1.5.1 Hurstville Horizons**

In 2001 Council undertook a broad long-term strategic planning process, called the Hurstville Horizons, to develop and build upon an agreed community vision for Hurstville. The vision was developed by the community and was endorsed by Council in 2002. It is:

***Hurstville: A friendly, diverse and sustainable city built on an all embracing community spirit, where we live, learn, work and play.***

Seven Horizon Programs were subsequently developed. The Horizons identify the issues Council will address and specify how Council will respond to those issues. Each Horizon has a specific goal and collectively these have been adopted to inform Council's direction for the future.

#### **Horizon Goals**

- o A safe and healthy Hurstville for all sectors of the community
- o A diverse and harmonious City with a strong sense of community, providing a range of social, cultural, education and leisure opportunities
- o A sustainable city that protects and enhances the natural environment for present and future generations
- o A built environment that reflects the character of Hurstville
- o An accessible city with sustainable transport networks and well maintained infrastructure that meets community expectations
- o To support the development of the Hurstville CBD as a regional centre, and the other commercial and employment centres as a vibrant mix of retail and business activities, to ensure the sustainable growth of employment and business opportunities
- o A highly effective and efficient organisation providing responsive and relevant services

Strategic directions have been identified within the seven horizons. They refer specifically to the whole of Hurstville City, but many of them, as follows, can equally be seen as desirable directions for the management of Council's Community Land.

- Promote a safe and healthy environment that enhances the community's well being, sense of safety and enjoyment of their environment.
- Minimise public health risks.
- Minimise public safety risks.
- Encourage improved road and safety awareness.

- Provision of spaces and places for people to participate and express their culture.
- Preserve and value the past.
- Council's programs and services support the social and physical well being of individuals and communities.
- Accessibility for all.
- Ensure the protection of the bushland, foreshore areas and native plants and wildlife.
- Promote and increase community participation and the level of environmental responsibility by businesses, schools, households and community organisations in the protection, restoration and enhancement of the environment.
- Provide a coherent vision for the future of the natural environment through the preparation and implementation of outcome-based and site specific planning controls.
- Council's walkways and footpaths present minimal safety risk to the community.
- Facilitate effective communication and community participation that encourages active involvement and engagement in governance, planning and decision making processes.
- Through community involvement and development, facilitate programs that are responsive to the needs of all members of the community.
- The organisation minimises risk and can respond to and recover from natural disasters and major incidents.

### **1.5.2 Recreation Strategy**

In 2005 Council, in association with Kogarah and Rockdale Councils, commissioned the preparation of a "Draft St George Region Leisure and Recreation Strategy Plan". The Draft Strategy is a valuable document which can be used to help inform this Community Land Plan of Management preparation process. The three volume Strategy was prepared following extensive public consultation and comprises a comprehensive analysis of the existing opportunities, future needs, and the key influences on participation in recreation within the region.

Within the accompanying Action Plan, eleven guiding principles for decision making as it relates to recreation have been suggested. These principles are:

1. Access for All
2. Fairness, Equity and Balance
3. Beneficial Outcomes
4. Quality and Safety
5. Continual Improvement
6. Sustainability
7. Multi-use and Efficiency
8. Community Building and Social Capital
9. Community Health
10. Partnerships and Shared Responsibility
11. Organisational Capacity

The following guiding principles have been highlighted to ensure that regional leisure and recreation planning within the St George region will:

1. Be consistent with achieving the stated St George region recreation vision and principles.
2. Support and deliver a range of leisure and recreation facilities, programs and services that are customer focussed and based on identified community needs within the region.
3. Monitor and respond to changes in the profile and leisure and recreation needs of the regional community.
4. Involve key stakeholders in the regional leisure and recreation planning, development and management process.
5. Seek to achieve consistency in the adoption of operational policies and delivery of professional leisure and recreation practices.
6. Collaborate with partners to improve access to leisure and recreation opportunities within the region.
7. Seek 'best value' and sustainable outcomes for the leisure and recreation facilities, programs and services within the region, and
8. Encourage the sharing of resources, skills and knowledge in leisure and recreation planning between the three Councils.

Although not yet an adopted Council document, the report recommendations have been acknowledged in the preparation of this Plan of Management.

## **1.6 Public Consultation**

Consultation with the community is an important part of the preparation of this Plan of Management. It gives Council a better understanding of the range of local issues affecting the use and enjoyment of the open space, and gives all sectors of the community the chance to have an input into the planning process. The direction of policy development is often guided in large part by the views expressed by the public.

All stakeholders are given the opportunity to express their opinions, provide relevant information or suggest valid alternatives to any of the strategies presented here. Comments regarding this or any other adopted Plan of Management may be submitted at any time. At the time of review of the Plan new issues can be incorporated and existing actions amended.

To make your submission as effective as possible, please ensure the following requirements are met.

1. List all points you wish to raise, referencing the appropriate section and page number.
2. Provide a brief description of each issue or subject.
3. State which strategies you agree or disagree with, providing reasons.
4. Suggest alternatives to any issues, where appropriate.

Submissions may be made in writing by letter, e-mail or fax.

Please address your submission to:

The General Manager  
Hurstville City Council  
P.O. Box 205  
HURSTVILLE NSW 1481  
Facsimile Number: 02 9330 6223  
E-mail: [hccmail@hurstville.nsw.gov.au](mailto:hccmail@hurstville.nsw.gov.au)

#### **1.6.1 Online Submissions**

You may also make a submission using the online form “Submission for Community Land Plan of Management” which can be found on Council’s website at [www.hurstville.nsw.gov.au](http://www.hurstville.nsw.gov.au) under the “About Council” zone. Follow the menu prompts to the “Plans & Reports” category, then to the “Community Land” page.

### **1.7 Leases, Licences and other Estates**

Leases, licences and other estates formalise the use of community land by commercial organisations and individuals providing facilities or services for public use, or by groups such as sporting clubs and schools. Activities should be compatible with any zoning or reservation, provide benefits, services or facilities for users of the land, and be authorised under the plan of management. The terms and conditions of any authorisation should ensure proper management and maintenance of the area or facility, and that the interests of the Council and the public are protected.

A lease is normally required where exclusive control of all or part of an area by a party is proposed. A licence may be granted where intermittent or short-term occupation of an area is proposed. The term “estate” is wide and includes many rights over land that can be granted. An estate is defined as an “interest, charge, right, title, claim, demand, lien and encumbrance, whether at law or in equity.”

#### **General Conditions**

There are restrictions on the ability of Council to grant leases, licences and other estates over community land.

Council may only grant a lease, licence or other estate if:

- the plan of management expressly authorises the lease, and
- the purpose of the lease is consistent with the core objectives for the category of land (refer Section 1.2), and
- the lease is for a permitted purpose listed in the Local Government Act 1993.

Permitted purposes are:

- activities appropriate to the current and future needs of the community in relation to a number of wide public purposes, including public recreation and physical and cultural development; and
- for short-term, casual purposes, including:

- the playing of a musical instrument, or singing, for fee or reward,
- engaging in trade or business,
- the playing of a lawful game or sport,
- delivering a public address,
- commercial photographic sessions,
- filming, and
- picnics and private celebrations such as weddings and family gatherings.

The use or occupation of any Parks for any of the above short-term casual purposes is prescribed only if the use or occupation does not involve the erection of any building or structure of a permanent nature.

To grant a lease, licence or other estate for a period not exceeding 5 years, Council must follow the prescribed regulations by:

- giving public notice of the proposal,
- placing a notice of the proposal on the land,
- notifying owners or occupiers adjoining the land, and
- notifying persons living in the vicinity of the land if Council believes that the land is the primary focus of the person's enjoyment of community land.

A public notice of the proposal must include:

- information sufficient to identify the community land concerned
- the purpose for which the land will be used under the proposed lease, licence or other estate
- the term of the proposed lease, licence or other estate (including particulars of any options for renewal)
- the name of the person to whom it is proposed to grant the lease, licence or other estate (if known), and
- a statement that submissions in writing may be made to Council concerning the proposal within a period, not less than 28 days, specified in the notice.

Exemptions for some purposes of use or occupation are allowed under the Act, however only if:

- the use or occupation does not involve the erection of any building or structure of a permanent nature
- in the case of any use or occupation that occurs only once, it does not continue for more than 3 consecutive days, and
- in the case of any use or occupation that occurs more than once, each occurrence is for no more than 3 consecutive days, not including Saturday and Sunday, and the use is completed within a 12 month period.

The Local Government Act permits the issue of leases for periods of more than 5 years and no more than 21 years, however such leases are not authorised by Council under this plan of management.

## **1.8 Legislative Framework**

In addition to the requirements of the Local Government Act 1993 and Amendments, this Plan of Management must comply with all other relevant legislation and policy, across all three levels of government. Examples of other legislation and policy which must be taken into account include The Environmental Planning and Assessment Act 1979, State Environmental Planning Policies, the Hurstville Local Environmental Plan 1994, and relevant Development Control Plans (DCPs).

## **2.0 Natural Areas**

### **2.1 Characteristics of Natural Areas**

Natural Areas are the most ecologically sensitive areas of community land. They are the last physical and visual reminders of the landforms and vegetation that existed prior to European settlement. Natural areas are important for conserving biodiversity as well as providing educational and recreational opportunities to the community.

The natural areas addressed in this Plan of Management form a network of undeveloped remnant terrestrial and aquatic sites that are valuable and inherently important assets in the Hurstville area. There are 33 natural areas listed in the Hurstville jurisdiction. Individually, the natural areas vary considerably in size, ranging from small isolated remnants or canopy of less than 0.05 hectares to significant consolidated areas of core bushland several hectares in size. In total area, they make up a significant proportion of the open space system (38% approx), however their distribution has a very strong bias towards the foreshore suburbs and later developed areas of the Peakhurst Ward. A list of the natural areas covered by this Plan of Management can be found in Appendix 1 - Schedule of Land.

The amount of remaining bushland in the Council area is now only approximately 4% of the original area. Historically the major cause of habitat loss was due to the clearing of native vegetation. Timber-getting was the first industry in the area. The felled timber was used in the construction of the growing city of Sydney during the 1800s, and the cleared land left behind provided space for the development of farm lands, and later the residential suburbs that now occupy most of the land in the Hurstville area. Most of these changes occurred before there was any system of creating reserves for nature conservation or any provision for wildlife management.

The preserved bushland, foreshore and wetland areas are typically fragmented, and are distributed along the creeklines and waterways of the Council area. The location, ecological sensitivity, development and usage levels of these areas vary considerably, however similar issues impact upon them all, and many of the pressures that threaten the survival of bushland and wetlands are interrelated.

Increased nutrient levels, which can change the biological composition of bushland, are created by urban and stormwater run-off, animal waste, sewer overflows and changed fire regimes. Changes in nutrient levels are particularly concerning when it is noted that Australian native plants are typically adapted to low nutrient availability. Conversely, weed invasion is accelerated through increased nutrient availability, dumping of garden rubbish into the bush, and general site disturbance. Invasive animals contribute to site disturbance and either prey upon or compete with native animals and birds for

food. Run-off, a product of urban activities such as land cultivation, general construction and the creation of impervious surfaces, is also partly responsible for erosion of top soil and contributes to siltation of waterways.

Hurstville Council is the owner of the majority of the Natural Areas listed and where Crown Land is indicated, Council is responsible for the care, control and management of these open spaces within the Hurstville area on behalf of the Crown.

In addition to the schedule of land (Appendix 1), aerial maps of the natural areas are provided in Appendix 3. Map 1 indicates the location of all natural areas covered by this Plan of Management.

Most of Council's larger open space areas are classified as Sportsgrounds and their description and management is addressed within that Generic POM (adopted 13/12/06). The Parks plan (adopted 27/6/07) covers the majority of the smaller local, district and incidental parks which have greatly varying characteristics in terms of size and form. The General Community Use areas plan (adopted 27/6/07) addresses those open space areas with a civic or utility function.

### **2.1.1 Geology and Soils**

The underlying geology of Hurstville is composed of two basic types: the Ashfield Shales of the Wianamatta Group, and Hawkesbury Sandstone. The Ashfield Shales form the bedrock for most of the city area. When weathered, the shale forms residual clay soils, with a gently undulating topography. It would predominantly have supported Sydney Turpentine Ironbark Forest, however as this was the most suitable land for farming and then for housing, almost all of the original natural areas on these soils have been lost.

Underneath the Ashfield Shales lie the Hawkesbury Sandstones, which outcrop along the south-western boundary of the Council. The sandstone shows greater weather resistance than the shale, and the topography formed adjacent to the Georges River and Salt Pan Creek is quite steep. The soils derived from the sandstone are sandy, thin, and support a diversity of species, which now comprises the majority of the remaining vegetation.

There is also a transition zone between the shale and sandstone, which is made by a series of shale and siltstone bands interbedded within the sandstone at the top of the sandstone sequence. The soils formed in this zone vary from clays to sands, and include detached sandstone boulders known as "floaters." The transition zone sustains an interrelated but unique vegetation type, between the typical sandstone and shale communities.

Bays and inlets, identified by mangroves and salt marsh, have been infilled by alluvial sands, which are soft and compressible. A volcanic intrusive identified within Evatt Park supports a closed forest association unique to the region.

## **2.1.2 Vegetation Types**

### **Estuarine Complex**

The Estuarine Complex occurs along tidal rivers and in shallow mudflats. Indicator species are the Grey Mangrove (*Avicennia marina*), a small tree up to 5m high, and/or River Mangrove (*Aegiceras corniculatus*), a shrub to 2m high which is usually found further upstream. The mangroves are often found in association with saltmarsh, with typical species of *Sarcocornia quinqueflora* and *Suaeda australis*; rushland of *Juncus krausii* and *Phragmites australis*; or low open forest of *Casuarina glauca*. Examples of these vegetation types are found at the following locations:

- Cedar Street, Lugarno (DECC land)
- Edith Bay Wetland, Lugarno
- Gannons Park, Peakhurst/Lugarno (Sportsground POM)
- Lime Kiln Bay Reserve (Wetlands), Oatley
- Myles Dunphy Reserve, Oatley
- Murdock Crescent Reserve, Lugarno
- Riverwood Wetlands/Lillian Road Reserve, Riverwood
- Salt Pan Creek Foreshore Reserve, Peakhurst
- Yarran Road Reserve, Oatley.

### **Turpentine Ironbark Forest**

The Wianamatta Shale soils of the north-eastern suburbs of the Council area once supported a vast Turpentine-Ironbark forest. The identifying canopy species are Turpentine (*Syncarpia glomulifera*), Grey Ironbark (*Eucalyptus paniculata*) and Broad-leaved Ironbark (*Eucalyptus fibrosa*). Dominant understorey species include Hop Bush (*Dodonaea triquetra*), Straight Wattle (*Acacia stricta*) and Native Elderberry (*Polyscias sambucifolia*), while *Viola hederacea* is a common ground cover species.

This association is now one of the rarest of all vegetation types of the greater Sydney region, with only 0.5% of its former area remaining. It has been listed as an Endangered Ecological Community under Schedule 1 Part 3 of the *Threatened Species Conservation Act 1995*. The only remnant within the Hurstville LGA occurs in William Road Reserve, Riverwood (part of Riverwood Park & Wetlands, within the Sportsground POM). The Black Forest Reserve, Beverly Hills (within the Parks POM) shows evidence of soil stored seed and may be suitable for regeneration of the Turpentine-Ironbark Forest association.

### **Sydney Sandstone Heaths, Scrub, Woodlands & Forests Complex**

#### **Sydney Sandstone Gully Forest**

This Forest is one of the dominant associations of the Sandstone Complex and is the most common type of remnant within Hurstville. It grows in sheltered gullies and hillsides on Hawkesbury Sandstone. Several distinct subunits occur, as described below.

#### **Open Forest/Woodland**

The dominant canopy species are Sydney Red Gum (*Angophora costata*), Sydney Peppermint (*Eucalyptus piperita*) and Red Bloodwood (*Corymbia*

*gummifera*). A diverse understorey includes Old Man Banksia (*Banksia serrata*) and Broadleaf Hakea (*Hakea dactyloides*). Examples are found at:

- Cedar Street Reserve, Lugarno
- Gannons Park, Peakhurst/Lugarno (Sportsground POM)
- Lime Kiln Bay Reserve (Oatley Heights Park), Mortdale
- Lugarno Parade Reserve, Lugarno
- Salt Pan Creek Foreshore Reserve, Peakhurst
- Yarran Road Reserve, Oatley.

#### Tall Open Forest

Typical overstorey species are Blackbutt (*Eucalyptus pilularis*) and Turpentine (*Syncarpia glomulifera*). The understorey layer includes Christmas Bush (*Ceratopetalum gummiferum*) and Blueberry Ash (*Elaeocarpus reticulatus*). Examples can be seen at:

- Gannons Park, Peakhurst/Lugarno (Sportsground POM)
- Hurstville Golf Course (Sportsground POM)
- Myles Dunphy Reserve, Oatley
- Murdock Crescent Reserve, Lugarno.

#### Closed Forest

A warm temperate rainforest association is found in HV Evatt Park at Lugarno (Sportsground POM). This vegetation is very rare in St George and uncommon in Sydney. Remnant species include Coachwood (*Ceratopetalum apetalum*), Grey Myrtle (*Backhousia myrtifolia*), Crinkle Bush (*Lomatia myricoides*), *Maytenus silvestris*, and a number of indigenous vines.

#### Sydney Sandstone Ridgetop Woodland

Sydney Sandstone Ridgetop Woodland occurs on Hawkesbury Sandstone ridges, plateaus and dry exposed hillsides. The dominant species are Sydney Red Gum (*Angophora costata*), Sydney Peppermint (*Eucalyptus piperita*), Red Bloodwood (*Corymbia gummifera*), Grey Gum (*Eucalyptus punctata*) and Rough-barked Apple (*Angophora floribunda*). The shrub layer is typically composed of Banksias and Hakeas. Examples can be seen at:

- Freeman Avenue Reserve, Oatley
- Lime Kiln Bay Reserve (Bay Road Reserve bushland), Oatley
- Lugarno Parade Reserve, Lugarno
- Marine Drive Reserve, Oatley
- Meyer Reserve, Oatley
- Murdock Crescent Reserve, Lugarno
- Oatley Park (specific POM)
- Peakhurst Foreshore Reserve, Peakhurst
- Salt Pan Creek Foreshore Reserve, Peakhurst.

Within Oatley Park and Lime Kiln Bay (Bay Road) Reserve, the Ridgetop Woodland intergrades with Shale/Sandstone Transition Complex.

#### River-flat Forest Complex

River-flat Forest grows on alluvium of the Georges River floodplains, including major tributary creeks. They often occur within or in close association with the

Estuarine Complex. The only River-flat Forest within the Hurstville LGA occurs at Edith Bay Wetland, Lugarno, and the dominant species is *Melaleuca linariifolia*.

#### Shale/Sandstone Transition Complex

The geology and soils of the Shale/Sandstone Transition Complex are variable and are characterised by lateritized shale lenses and sandstone at the top of the Hawkesbury Group and the bottom of the Wianamatta Group. Typical species are Grey Gum (*Eucalyptus punctata*), Scribbly Gum (*Eucalyptus haemastoma*), and Red Bloodwood (*Corymbia gummifera*). The lower storey includes Hairpin Banksia (*Banksia spinulosa*), Geebungs (*Persoonia spp.*) and many Pea-flowers. It may be seen in the following locations:

- Hurstville Golf Course (Sportsgrounds POM), Peakhurst
- Lime Kiln Bay Reserve (Bay Road Reserve), Oatley
- Oatley Park (specific POM).

The quality of remnant bushland varies significantly, depending on several factors including the size and shape of the remnant; the proximity of housing or human use of adjoining land; the intensity of the use of the land, and the types of activity undertaken, and the amount and quality of stormwater, drains, and run-off flowing into the bushland.

## **2.2 Significance of the Natural Areas**

Natural Areas perform a significantly different role within the open space network to the other categories of community land. Whilst the primary function of areas such as sportsgrounds and local parks is considered to be the provision of space and facilities for human recreation, involving passive or active physical pursuits, natural areas rather have the retention of the natural vegetation communities, fauna, geological and hydrological characteristics as the prevailing management aim. Human interaction and activity is an ancillary use in these areas provided it does not conflict with the primary management objectives. As such, the significance of natural areas also has a different focus to other types of open space.

Environmentally, natural areas have very high ecological values. Natural areas are significant in providing areas for vegetation, habitat for native fauna, and “green web” links between disbursed areas of bushland. The vegetation helps improve air quality and climate, provides shade and protects soils. Natural areas help to reduce stormwater runoff by providing pervious surfaces, and supporting vegetation that will absorb it. This assists in reducing the volume and velocity of runoff, reduces soil erosion and helps protect water quality and filtration processes.

Remnant or endemic vegetation in reserves can be a visual reminder of the ecological communities that once dominated the landscape of the area but have been progressively removed through the spread of urban development, some of which are now classified as endangered under the Threatened Species Conservation Act 1995.

Their ecological features provide natural areas with similarly high educational and scientific or research values. They can provide an opportunity for all community members to experience nature and develop an awareness and interest in the environment. Natural areas are often used as a teaching resource by local schools and tertiary institutions; they are highly valued for scientific research and provide opportunities to observe and understand the complex variety of processes and impacts that affect the functioning of the intrinsic biological systems.

Open space offers residents the option of being involved in free-of-charge physical activities, which can contribute to a person's general health, wellbeing, fitness, coordination, and overall physical capabilities. Natural areas provide opportunities for outdoor recreational activities such as walking, bird watching, picnicking, photography and painting. The unique environment of natural areas allows for interaction with nature and wildlife. In addition, undeveloped environments have been shown to have calming and restorative powers that are able to have positive effects on human behaviour and function. Natural areas possess aesthetic and scenic qualities, and are valued for the tranquil space they provide to relax and escape the pressures of urban lifestyles. Although far from a 'wilderness' state in an urban part of greater Sydney, retaining these natural areas so close to urban development can provide visual and also psychological relief from the built up surrounds. By contributing to the maintenance of water and air quality, natural areas also help to improve the wider living environment for the community.

Some of the natural areas contain remnants of both Aboriginal and European heritage, which serve as a reminder of the traditional Aboriginal culture, and the lifestyles of the local pioneer settlers and following generations. There continues to be a strong interest in local heritage, and preservation of our natural resources provides a strong link for historical interpretation.

It is therefore vital that Council manages the existing natural areas in a manner that best caters for their full protection, to retain the inherent and subsidiary values described, and to provide as a secondary outcome for the needs of the Hurstville community.

## **2.3 Planning Considerations**

Under the Local Environment Plan (1994), the land referred to in this Plan is zoned as 6A: Open Space. The objectives of this zoning are:

- a. to recognise existing publicly owned land used or capable of being used for public recreation purposes; and

b. to identify and protect land intended to be acquired for public open space.

Works permitted under the zoning include:

- development classified as exempt development,
- public utility undertakings other than gas holders or generating works,
- buildings ordinarily incidental or subsidiary to the purposes of landscaping, gardening or bush fire hazard reduction,
- commercial signs,
- community facilities
- recreation areas
- recreation facilities
- refreshment rooms, and
- works (but not buildings) for the purposes of landscaping or gardening.

Development in 6a zoning must also be in accordance with the applicable Plan of Management as adopted for that area.

All of the parks are wholly or mostly adjoining residential development (Zone 2). Other land types adjacent to some parks are shown in the following table:

<b>Zone</b>	<b>Adjoining Parks</b>
General Special Uses Zone 5(a)	Lime Kiln Bay Reserve Oatley Park Park Avenue Reserve
Railways Special Uses Zone 5(b)	Lillian Road Reserve Myles Dunphy Reserve Yarran Road Reserve
Other Public Open Space Zone 6(a)	Cedar Street Reserve South Evatt Park Foreshore Reserve Jinna Road Reserve Lime Kiln Bay Reserve Oatley Park Peakhurst Foreshore Reserve
Waterways Zone 7	Banksia Place Reserve Belmore Road Reserves (all) Edith Bay Wetland Evatt Park Foreshore Reserve Foreshore Reserve (Henry Lawson Dr-Clarendon Rd) Freeman Avenue Reserve Jinna Road Reserve Lillian Road Reserve Lime Kiln Bay Reserve Murdock Crescent Reserve Oatley Park Peakhurst Foreshore Reserve Salt Pan Creek Reserve Yarran Road Reserve

## **2.4 Management and Maintenance**

### **2.4.1 Management Structure**

The management of Council's parks comes under the Service Delivery Directorate of Hurstville City Council. There are currently 56 permanent full-time staff employed within the Parks and Recreation section, who are responsible for the day to day upkeep of the parks and amenities, as well as all other open space.

Natural areas are maintained by two Bushcare Officers and the Wetland Officer, who work with volunteers, the Oatley Park Bushcare Officer, and the part time Bushcare crew. Contract bushland regenerators are periodically used for fire trail maintenance, primary weed removal, and spot maintenance of some sites with difficult access.

### **2.4.2 Funding**

The maintenance of the listed Natural Areas is funded entirely by Hurstville City Council. They have an allocation of approximately \$544,000 per year (2007/2008 financial year), which includes budget values for Oatley Park.

Grant funding for major works and special projects has periodically been obtained from a variety of external sources including the NSW Environmental Trust, and the Commonwealth's Natural Heritage Trust Envirofund. Council continues to seek available grant funding for suitable projects.

## **3.0 Aims and Objectives**

### **3.1 Aim**

The aim of the Natural Areas Plan of Management is to provide guidelines to assist with the maintenance, management, use and improvement of Council's open space areas categorised as "Natural Area" land. It will provide short and long term policy, and possess a degree of flexibility to respond to changing biodiversity, community, and legislative needs.

### **3.2 Objectives for the Natural Areas Generic Plan of Management**

The objectives for the Parks relate to the core objectives specified within the Local Government Amendment Act 1998, detailed in Section 1.2, and Council's Management Goals (Horizons) outlined in Section 1.4.

1. To provide appropriate levels of community access to Hurstville's natural areas whilst maintaining the integrity of the land and its biological resources.
2. To manage natural areas understanding that fire is essential for the long term survival of the flora, but having regard to bushfire hazard & the need to reduce fuel loadings and maintain Fire Protection Zones.
3. To manage the environmental elements of natural areas to preserve biodiversity values and minimise disturbance.
4. To protect indigenous fauna and their habitat, encourage responsible use of natural areas by pet owners, and limit the effects of invasive animals on native wildlife and vegetation.
5. To maximise funding opportunities for the preservation and maintenance of natural areas and any associated services and facilities.
6. To manage natural areas efficiently and effectively, and allow for their equitable use for a range of informal and passive recreational activities that are compatible with management objectives and the function of natural areas.
7. To manage areas with multiple land categorisations contained within natural areas according to the requirements of their core objectives.

8. To provide and maintain, within budget, natural areas of high quality and minimal but appropriate amenity, aesthetic and landscaping facilities to maximise benefits for all users and to minimise ecosystem disturbance.
9. To protect and preserve the remnant vegetation for its inherent biodiversity values and to reduce and control the impacts associated with adjacent human use of the areas.
10. To protect and preserve the remnant vegetation for its inherent biodiversity values and to reduce and control the impacts associated with adjacent human use of the areas.

## **4.0 Management Issues**

### **4.1 Access**

**Objective:** *To provide appropriate levels of community access to Hurstville's natural areas whilst maintaining the integrity of the land and its biological resources.*

In principle, all of Council's public open space areas should be accessible to the whole community, regardless of age, ability or gender. However natural areas have particular requirements for the preservation of biodiversity, and restricted or conditional access may be appropriate in some circumstances.

Natural areas within Hurstville Council are limited in distribution to the Peakhurst Ward suburbs of Lugarno, Oatley, Peakhurst and Peakhurst Heights, and Riverwood.. With few exceptions, the natural areas are linear in shape and line the foreshores of the Georges River, Salt Pan Creek, and associated bays and inlets. Council owned and managed land is interspersed with some significant areas of Department of Environment and Climate Change (Parks & Wildlife) land, which provide linkages around the majority of the foreshore of the LGA.

Most natural areas are accessible by foot from local surrounding streets, and some are situated within easy access of local bus or train services. None of the city's natural areas have off street car parking allocations. This is responsive to the fact that they are principally locally used and accessed by foot, and adjacent on street car parking is generally available where sites are accessed by motor vehicle. Any off street parking would encroach on the available open space area, compromising both the aesthetics and recreational functions of the land, contrary to the core objectives for the management of natural areas and creating an alienating and unsustainable land use.

Vehicular access onto natural areas is restricted to maintenance and emergency vehicles except where consent is obtained from Council for a specific purpose. Permits to obtain permanent vehicular access to private property over community land will not be granted, in accordance with Section 46 of the Local Government Act 1993. Uncontrolled vehicular access by cars, motorbikes and even bicycles into and through natural areas can result in erosion and damage to vegetation and habitat. Existing fire trails are to be maintained in good condition, or shall be closed and rehabilitated where no longer required. No new trails are to be constructed.

Walking tracks and trails will assist with the provision of safe and sustainable community access to natural areas. The lack of formal pathways and defined trails results in visitors creating their own paths, which increases the potential for damage to sensitive vegetation, and hinders access for those with impaired mobility or sensory abilities. Where required, the location and

construction of tracks shall be undertaken to ensure minimal erosion, vegetation and soil loss, and be of a suitable standard to require minimal maintenance. Tracks are to be maintained to ensure they do not become unsafe, or cause land degradation. Council may close and rehabilitate any tracks that are assessed as being non essential, poorly located, or that represent an erosion hazard.

General public access to natural areas is permitted and will be facilitated wherever possible. However public access may be denied in certain situations to assist with the protection or rehabilitation of flora or fauna species or special items of significance, as considered appropriate by responsible field staff.

Access for people with a disability is accommodated where possible for general movement around open space areas and for the use and enjoyment of facilities and amenities. However given the often rocky and sloping topography typical of most natural areas, improving access and facilities to such sites for people with a disability will need to be carefully and strategically planned in coordination with planning for all other public facilities, and funded and staged over many years. Undertaking significant earthworks eg, to create wheelchair accessible pathways through bushland will generally cause disturbance to the environment and be contrary to management objectives for natural areas, however focussing on access to strategic points such as lookouts could be beneficial and applications/submissions will be carefully considered. For further information on disabled access, refer to Council's "Social Plan for People with Disabilities – 2004".

Access to natural areas to undertake scientific research may be granted to contractors, other authorities or students, provided that permission from Council or a delegated officer is sought, and that adequate details of the project are provided to Council in writing prior to any work commencing. Copies of any results or final project reports are requested to be submitted to Council for record keeping purposes.

## **4.2 Bushfire Management**

*Objective: To manage natural areas understanding that fire is essential for the long term survival of the flora, but having regard to bushfire hazard & the need to reduce fuel loadings and maintain Fire Protection Zones.*

The ecological benefits of a regular fire regime vary depending upon the vegetation community, season, intensity and frequency of fires. If fires occur too frequently, plants may not have had sufficient time to reproduce and restore the seed bank, which can result in localised extinction of species. Conversely, fire infrequency allows fuel loads to accumulate, which pose a hazard to adjoining properties and can have a detrimental effect on the regeneration of species where fire is required for germination. In conjunction

with biodiversity management, the management of the potential bushfire hazard within Council's terrestrial natural areas is seen as a priority issue, and hazard reduction programs should include an adequate environmental assessment and be implemented in a manner which protects the biological diversity of the reserves. Not all of the natural areas fall within the declared bushfire protection zones however bushfire hazard reduction will be undertaken within all areas of remnant bushland where fuel loadings indicate it is necessary.

Much work has been done, and is continuing, to ensure the bushfire hazard is at a minimum level. It is not feasible or reasonable to expect no hazard at all, given that fire is a natural and necessary part of the Australian landscape, and particularly of the dry sclerophyll forest vegetation found in many of the reserves. However the risk can be assessed, and fire used as a beneficial tool to keep the bushland healthy.

Council, as an active member of the Bankstown/Hurstville Bush Fire Management Committee, meets regularly with the NSW Fire Brigades to discuss and prioritise hazard management activities. All bushland areas are inspected annually or on request and their fuel loadings and other risk factors assessed, and various methods of fuel reduction may be recommended.

Appropriate buffer zones are maintained close to residential areas. Manual removal is the primary method of removal of fuel, and it is done on a continual rotating basis between sites where fuel loadings exceed recommended levels. Other methods of fuel reduction include implementing small pile burns (which also help to stimulate regeneration of soil stored seed), and larger scale broad acre burns. The aim with all of these methods is to reduce the level of leaf litter and flammable material on the ground. Trees and other live plant material are not as flammable and do not pose as much risk as small dry ground fuel.

All hazard reduction burns should be conducted in a manner that retains patches of unburnt vegetation. Different species and plant communities have varying sensitivity to fire and may require varying fire frequencies and intensities for survival, which needs to be considered prior to undertaking any management activities involving the use of fire.

A Bushfire Management Plan (BFMP) has been prepared for Oatley Park and the adjoining areas of Lime Kiln Bay Reserve including Oatley Heights Park, and was adopted by Council in 2003. Assessment and reduction of fuel levels will continue with the implementation of the BFMP. The Plan is due for review in 2008, and the inclusion of all natural areas within the revised plan will be considered.

In the event of an uncontrolled fire, there could be significant impacts on site access, the safety of patrons and the condition of remnant biological resources. The potential for bushfire should inform the selection of any building materials used and the placement of any fixtures.

Fire danger warnings will be strictly adhered to and implemented in all open space areas. This plan authorises any necessary activities to be carried out during declared bushfire emergencies. Following the carrying out of any emergency works, periodic monitoring will be undertaken, and rehabilitation works undertaken if necessary.

Where a new development or subdivision adjoins a natural area reserve, any required fire protection zones are to be incorporated within the private land and are not to encroach on the natural area reserve.

### **4.3 Environmental Management**

**Objective:** *To manage the environmental elements of natural areas to preserve biodiversity values and minimise disturbance.*

The management issues regarding protection of vegetation and fauna apply to all of the natural areas listed in this plan, as well as to other parks and reserves with dual categorisation as natural areas. Council has a goal to maintain current biodiversity values and to continue to reduce the impacts affecting ongoing ecosystem processes, concurrent with Council's environmental policy.

Pollution is a major factor in weed invasion and in the degradation of natural areas. Council will seek to ensure that no pollution is generated on the land, and that adequate preventative measures are taken to avoid adverse impacts from adjoining land. This plan seeks to ensure that natural hazards are not increased by inappropriate development and activities, and that all possible actions are taken to prevent degradation and loss of natural vegetation.

This plan does not authorise new development works within natural areas except where endorsed by Council and the wider community for essential amenity purposes, and provided any necessary approvals have been obtained. To be approved any new development works (such as construction of roads, amenities etc.) must be consistent with the objectives of this plan, be identified in an adopted master plan for the parcel of land on which the works are proposed, and have any necessary approvals required under the Environmental Planning and Assessment Act 1979 or the Local Government Act 1993. Where any activities or works are proposed, an evaluation of specific biodiversity information relating to the site should also be compiled and taken into consideration.

Where development activities do occur they shall be undertaken in a manner that minimises the area, degree and duration of disturbance, and areas are to be restored to the greatest extent practicable. On site resources such as topsoil, rock, and existing vegetation, will be used and retained on site to the maximum possible extent.

During any construction works, and in the maintenance of roads and tracks, all activities should be undertaken ensuring that normal environmental protection, pollution control and health guidelines are complied with. Adequate silt control techniques should be implemented to prevent soil erosion and sedimentation. Minimisation of run-off will help to reduce the quantity of nutrients entering watercourses or water bodies. Watercourses within bushland are particularly susceptible to disturbance and invasion by weeds and need to be regularly monitored.

Works should be completed in practical stages (clearing, topsoil stripping, relocation of topsoil, mulching, planting, etc.) and should follow the principle of isolating stockpiles of different materials to prevent contamination. Materials should only be stockpiled on a temporary basis, and appropriate actions taken to prevent adverse affects such as soil erosion and compaction, the introduction of weed species, and the like. Materials (including concrete, gravel, topsoil, etc.) shall be stockpiled in such a way as to prevent nutrients from leaching into watercourses or into groundwater systems. Stockpiles should be situated away from the base of mature trees. Development on adjacent land should also adhere to the guidelines provided herein.

Following construction, all areas immediately adjoining natural areas shall be restored, as far as possible reinstating the plant species, structure and dynamics of the pre existing indigenous plant communities. Strategies should be adopted which maximise the natural recovery of those plant communities. Restoration shall ensure that weed invasion of nearby natural areas is minimised and shall include ongoing maintenance of restoration measures.

Water quality entering natural areas needs to be maintained at a level which is acceptable for sustainable natural area management, and as far as possible to maintain pre development conditions. Permeable ground surfaces are to be maintained wherever possible and on site disposal of stormwater should occur. Natural hydrological processes are to be maintained, including natural vegetation and flow regimes, to maintain creek line stability and health of terrestrial and aquatic plant communities. There shall be no reclamation, filling or draining which results in any loss of, or disturbance to wetlands or other associated natural habitat.

Disturbance to acid sulphate soils causes degradation of lowland environments and estuarine water quality. These are soils with layers rich in iron sulphides which oxidise to sulphuric acid when previously waterlogged soils are drained or excavated. They are generally associated with estuarine swamps, and should preferably be left undisturbed.

Drainage works shall only be undertaken where they complement the natural drainage patterns on the land, and where the works are essential to protect tracks, roads, services, buildings or other facilities on the land. Drains into natural areas should incorporate pollution control measures to minimise any debris, nutrients and other chemicals entering the waterway. Earthworks shall be minimised as far as possible, and are to be undertaken in a manner to ensure that the necessity for rehabilitation is minimised.

Council will take into account the effect of development and management activities carried out on adjoining land. Activities of concern include discharge of stormwater, clearing and unauthorised filling. Wherever possible, adjoining developments should seek to provide for buffer zones on private land adjoining natural areas and joint boundary management programs with adjacent landholders.

Rubbish dumping on public land, including garden waste, is not permitted. Any waste material should be disposed of off site or in a manner that does not affect natural vegetation or encourage the spread of weeds. Litter shall be regularly collected and removed, although it is the responsibility of users to ensure that rubbish is taken with them. Litter bins shall only be provided in natural areas in accessible locations adjacent to any existing amenities.

## 4.4 Fauna

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*Objective: To protect indigenous fauna and their habitat, encourage responsible use of natural areas by pet owners, and limit the effects of invasive animals on native wildlife and vegetation.*

Natural areas form an essential part of a regional network of habitats, wildlife corridors and outdoor settings that host a number of fauna species and their habitats, some of which are threatened. Native fauna populations and habitats will be protected, maintained and where possible enhanced, and the impacts on wildlife and habitat shall be taken into consideration whenever any management activity is proposed, such as bushland regeneration, weed control, or bushfire hazard reduction. To better enable Council to understand and manage the fauna assets, a thorough fauna survey and analysis needs to be undertaken as soon as funding can be allocated.

A number of threatened fauna species (especially birds) utilise wetlands, foreshores and adjoining bushland areas, and are subject to international and national agreements. Specific management guidelines may apply, relating to disturbance of nesting sites, inter-tidal feeding grounds and high tide roosts and must be specifically taken into account

### Nuisance and Invasive Animals

Foxes and feral cats thrive due to a lack of natural predators, prey upon wildlife and contribute to the spread of weeds through the consumption of seeds and fruit. Construction of dens creates soil disturbance, and they have contributed to the displacement of local populations of marsupials. Due to their high adaptability, eradication is unlikely however impacts can be minimised by implementing good housekeeping techniques (such as those described on Council's website). Council also employs a pest control contractor to catch foxes, and other invasive species, where possible. A regional education program is being developed and regional control programs

will be investigated subject to available resources and public health and safety requirements.

There is a growing awareness among the community and an interest in reducing numbers of Indian Mynas, an introduced bird species capable of displacing native birds and spreading lice and disease. A control program is being investigated for staged implementation across the LGA which is anticipated to impact on the City's overall Myna bird population.

Problematic native bird species such as Noisy Miners, that exhibit aggressive behaviour towards other birds, will be discouraged through such means as careful selection of landscaping species. Their increasing presence is reportedly a result of the use of hybrid natives (such as Grevilleas and Bottlebrushes) in the surrounding community and other non local plant species which do not favour the endemic bird population.

Nesting native birds, particularly Magpies and Noisy Miners, can be a nuisance for some patrons during their breeding season. Magpies are protected throughout NSW and it is illegal to harm the birds or collect their eggs. For most of the year they are not aggressive. Nesting occurs between August and October, and for four to six weeks they may become very defensive of their territory, swooping over the head of a person walking past. This behaviour is usually only a warning and it is rare that a magpie will make contact with its beak or claws. Native birds are in their natural environment within trees and open spaces and as such, people using the reserves and facilities are requested to be tolerant and respectful of such behaviour if it occurs.

Council is a representative of the recently established Southern Sydney Regional Animal Management Committee (SSRAMC) which takes a strategic and regional approach to handling invasive animal issues. The committee is currently in the process of preparing education and control programs for various invasive species. Wherever animal control programs are implemented, appropriate public notification will be given.

#### Companion Animals

Unleashed or uncontrolled dogs can disrupt other open space users and/or their pets. Similarly, dogs and other pets can cause disturbance or harm to native birds and animals, and their habitats.

Dogs are permitted in public open space areas, although they must be on a lead and under the owner's control at all times. Within natural areas this is particularly important, and dogs should be kept to designated walking tracks only. Owners must collect and remove their pet's droppings. Behaviour inconsistent with the regulations can be a cause of concern or difficulty to other users who do adhere to the regulations or use the reserves for other reasons. For the safety of wildlife, it is preferable that cats are confined indoors or within a cat-run, and especially at night. Cats may be walked on a lead also, and due to their predatory nature it is strongly encouraged that they not be permitted to roam the bushland unattended.

Council has two areas where pets (dogs) are permitted off lead (Lower Gannons Park and Riverwood Park), both of which are classified as sportsgrounds, but have dual categorisation as Natural Areas. The Sportsgrounds Generic POM should be consulted for further information regarding the off-leash areas.

## 4.5 Funding

**Objective:** *To maximise funding opportunities for the preservation and maintenance of natural areas and any associated services and facilities.*

The provision and maintenance of high quality services and facilities is dependent upon and limited to the allocation of sufficient financial, material, and human, resources. Natural areas resources are predominantly funded internally through Council's annual operating budget, and supplemented by the capital works program and Section 94 levies on development.

There is currently an annual budget allocation of around \$544,000 for the maintenance of all listed natural areas, including bushland regeneration, bushfire hazard reduction and fire trail maintenance. This allocation is increasingly being stretched in an effort to meet the demands of increasing usage due to growing population and development levels, and priorities and commitments to other projects within Council. Expenses have also significantly increased, placing continual pressure on managerial and operational staff to meet appropriate maintenance standards within budget. The Infrastructure Plus infrastructure levy does not currently apply to the provision or enhancement of any facilities within natural areas.

Small amounts of external funding are periodically available, usually as grant allocations for specific projects. These funds are generally awarded on a dollar for dollar basis and so require time and the dedication of money in their preparation. They are usually permitted to offset materials and contractor costs only, not staff costs which often make up the major proportion of the budget. Demand for such grants is high, often outstripping supply. Despite these drawbacks, Council is committed to pursuing external funding opportunities wherever possible, and has been successful in receiving several large and small grants for a number of Bushcare sites and projects.

## 4.6 Management and Use

**Objective:** *To manage natural areas efficiently and effectively, and allow for their equitable use for a range of informal and passive recreational activities that are compatible with management objectives and the function of natural areas.*

Natural area management aims to allow for the retention and preservation of the maximum amount of remnant bushland and waterways for the inherent ecological values they contain and for wider community benefit. Council also must ensure that optimum condition of the reserves is maintained, that conflicts are minimised, and that any works undertaken are compatible with the existing functions and character of the land. To provide the best service to the community, the management of natural areas needs to be well planned and resourced and their use needs to be permitted on an equitable basis, and ensuring that ecological values are preserved.

Natural Areas have the capability of providing for a variety of recreational activities and this plan aims to ensure that opportunities for recreational use within natural areas are maximised without impacting upon the existing ecological values of the environment in which they are taking place. Acceptable activities include walking, picnicking, birdwatching, painting and photography, fishing, swimming, and other passive activities, where they do not compromise the use of the land as a natural area. Cycling within natural areas is permitted on constructed roads and tracks only, such as fire trails, and is not permitted on walking tracks or off-road in bushland areas.

Activities interfering with the peace and ecological diversity of natural areas are generally discouraged, except where specific provision has been made for them. Provision for active recreation such as organised sports is not made in natural areas. Other activities not permitted include the use of powered vehicles (except those authorised for management or emergency purposes), the collection of fauna and flora, rocks, soil, timber (alive or dead) or leaf litter, hunting, horse riding, and the clearing of vegetation for views or for any other purpose.

Maintenance staff are allocated to parks according to the requirements of each area. As none of the parks are large enough to warrant permanent staffing, maintenance crews visit each park on a regular roster basis, usually every three weeks. Over time, the staff structure and funding levels for park management may be modified to better address the changing recreational needs of the community. Where contract or volunteer labour may be used to assist with managing the land, Council will ensure that supervisors have appropriate qualifications and experience, and that they are made aware of the requirements of this plan.

The staging of circuses and carnivals on open space within Hurstville is not permitted in accordance with Council policy number 3-004, largely due to extensive damage to surfaces that has occurred previously. Community fairs are not permitted within or immediately adjacent to any natural area as their staging would be inappropriate and an incompatible use of the land. Filming for commercial projects may be permitted in accordance with policy number 3-524, subject to written approval from Council, adherence to all conditions of compliance, payment of the appropriate fee and bond, and providing that is it not disruptive or contrary to the best interests of persons normally entitled to use the site.

Another factor affecting the management of natural areas is the proximity of local residences, and the impacts such as noise pollution and inappropriate after hours use that can occur. Neighbouring residents are encouraged to notify Council (or the Police as necessary) if undesirable behaviour is occurring. Council is responsive to the needs of surrounding residents, will take appropriate action to address any issues that arise, and as far as possible will consult with adjoining owners in relation to management activities which may affect them.

Conversely, adjoining residents can have an impact on the use and condition of open space, and especially so in natural areas, given that residential development is predominantly built up around them and there are no clear boundary lines. Bushland, and indeed all open space is therefore frequently subject to encroachments such as through the extension of private gardens, mowing, run-off, weed propagules and other garden waste, and also through the parking of private vehicles. Encroachments restrict public access over the open space, limiting the area of land available for the wider community to use, they add to the incremental loss of bushland and can contribute to the introduction of unwanted species into the site. Where they occur, encroachments will be removed to ensure maximum availability of public land, and to reduce any impacts on native flora and fauna.

Any constructed items of heritage significance occurring on natural area land (eg. The depression era sandstone structures in Oatley Park) will be protected in accordance with the requirements of the item's listing. Some natural areas may also contain a diversity of Aboriginal sites or heritage elements. The quantity of these cultural places and items remaining within Natural Areas is due to their lower levels of disturbance in comparison to other land following European settlement and urbanisation. The relics are of particular importance to the community and are protected by both state and federal legislation.

Minor discrepancies with some land parcel descriptions, boundaries and classifications have arisen during this revision process. The clarification and resolution of any land ownership matters will be attended to in consultation with the relevant internal departments and external government authorities as a priority during the life of this plan. This will ensure consistency and accuracy of community land information throughout Council's planning and asset management systems. Similarly, other government authorities may have responsibilities or involvement in the management of the land or of immediately adjacent land. This will be taken into account, and where appropriate, consultation will take place with relevant authorities.

Where subdivision proposals include the dedication of land to Council as natural area bushland reserve, the dedication will only be accepted if the natural area reserve will be of sufficient size and character to be manageable as a natural area bushland area, and such land must be accessible from approved paths or roads to allow maintenance and access. Smaller sites requiring more intensive management may be accepted if they support significant ecological values, recreational values, or landscape features, however the condition of the bushland/vegetation and any subsequent

requirements for dedication of maintenance resources must also be considered.

The plan authorises the Council to lease land to which this plan applies for a purpose which is specifically allowed under the terms of this management plan. Any leases are to be issued in accordance with the provisions of the Local Government Act, and will have regard to the environmental impact of the use, as provided for in the Environmental Planning and Assessment Act, 1979.

## 4.7 Management of Dual Use Areas

**Objective:** *To manage areas with multiple land categorisations contained within natural areas according to the requirements of their core objectives.*

Within the natural areas classification, there are several areas that are appropriately placed in an alternative category. Most of the multiple classifications comprise of other natural area land types, such as bushland adjoining a wetland site or with a creekline (Watercourse) running through part of the area (eg. Myles Dunphy Reserve). A few other areas exhibit characteristics of alternate land categories eg. Lime Kiln Bay Reserve (Glen Road Reserve) is predominantly a park but is included in the much larger Bushland/Wetland consolidated reserve; and Murdock Cres Reserve retains part of its previous General Community Use category due to the utility wires crossing the upper part of the reserve. Where a dual categorisation applies to any area of land, the land will be managed in accordance with the core objectives relating to the category.

Management of natural areas needs to address the retention and protection of any remnant flora and fauna or natural waterways, whose presence has triggered the initial classification of "Natural Area". These areas are by definition quite distinct from all other types of open space and care must be taken to ensure that boundaries are respected and encroachments do not occur. The bushland, foreshore, watercourse and wetland areas will be managed with reference to the core objectives for Natural Areas and the applicable sub-categories. Where maintenance or improvement works are required within the relevant parks, due consideration must be given to the long term health and preservation of natural areas, to avoid potentially adverse impacts on the natural environment.

Council may grant an easement over Community Land for the provision of public utilities or works associated with or ancillary to public utilities, in accordance with the Act and where such activities are unlikely to negatively impact on the land. There are no additional requirements within the Act for the granting of these easements.

## **4.8 Natural Areas and Community Facilities**

**Objective:** *To provide and maintain, within budget, natural areas of high quality and minimal but appropriate amenity, aesthetic and landscaping facilities to maximise benefits for all users and to minimise ecosystem disturbance.*

The community highly values and utilises Natural Areas as recreation spaces. Recreational activities within natural areas are encouraged, but these are secondary to the objective of managing the land to retain its natural features and qualities. Council will consider the provision and upkeep of amenities and facilities where it is consistent with the need to facilitate public enjoyment of the natural area compatible with its conservation, however generally, provision of any facilities in sensitive natural areas will be limited and must be sympathetic to the natural environment.

There are 33 natural areas identified within this plan of management which collectively provide many passive recreational opportunities for residents and visitors to the LGA. The size and shape of the reserves generally is determined by the surrounding street or adjoining land use boundaries. There are now limited opportunities to increase the size or number of natural areas, despite a persistent community interest in additional green space areas. However, where opportunities arise to obtain suitable land adjacent to existing sites for the purpose of expanding the natural areas, Council may consider its purchase subject to available funds and long term goals.

Maintaining the quality of open space areas is a high priority for Council and the public equally. Variation is experienced according to weather and seasonal conditions. A program of ongoing maintenance and monitoring is implemented to sustain the quality of natural areas to the best possible standard given the available resources. Maintenance of natural areas is to be undertaken in accordance with Council's predetermined service level agreements. Maintenance activities include weed removal and control, rubbish collection, and addressing acts of vandalism.

Council's natural areas are maintained without the provision or intention to undertake any watering additional to that received from rainfall, except where small areas of planting may be established. Plants will be established with water storing crystals, to reduce (or eliminate) the need for additional watering, and follow up hand watering may be done during extreme weather conditions if needed. The use of turf should be avoided near bushland areas, and if buffer zones are required, clean mulch should be used instead, which will further assist in retaining soil moisture.

Lighting shall not be provided in natural areas, except where required for public safety and the protection of assets. Where lighting is considered to be necessary, solar lighting may be used as a means of improving sustainability and reducing energy costs.

The installation of any radio or telecommunications infrastructure within any natural area is strongly opposed by Council and is prohibited under this Plan, although Councils do not have regulatory control over "low impact facilities". Development Control Plan No. 5 Radiocommunications and Telecommunications, has been adopted and is enforced by Council. It provides controls for the siting, design and installation of telecommunications and radiocommunications facilities that require development consent from Council, and provides guidelines for telecommunications carriers for the siting, design and installation of "low impact" facilities. Other services and utilities (such as water supply, sewerage, and electricity supply) may be constructed, maintained or repaired on the land given the statutory jurisdictions and requirements of other government authorities, provided that the other guidelines of this plan are complied with, and appropriate community consultation is undertaken.

As well as providing for a variety of informal uses, some of the natural areas may provide supplementary facilities to enhance people's enjoyment of their visit. These facilities will be provided in high use areas only, subject to an identified need, and ensuring the preservation of existing natural values. Facilities catering for active recreation purposes will not be provided in natural areas.

The level of facilities provided, and the maintenance standards provided by Council staff are kept within allocated budgets and to an agreed level of care, however the longer term provision and upkeep of adequate facilities for patrons needs to be assessed. Increasing urbanisation is expected to place stronger demands on the provision of facilities and their upkeep. The maintenance and scheduled upgrade of any infrastructure is therefore crucial for the long term management of the passive recreation areas, and as with any future upgrades, should meet agreed visual standards.

Site landscaping refers to the soft and hard elements of the environment that serve both a functional and aesthetic purpose. The provision of items such as walkways and paths, fencing, and signage, as well as plant material in appropriate locations, are utilised to help open space users navigate their way around an area in a safe and convenient manner.

A balance needs to be maintained between installing hard landscaping elements and preserving the maximum amount of unsealed open space area wherever possible. While walking tracks will be created and maintained in most areas, the introduction of a thoroughfare through an area to facilitate and direct movement and access must be weighed against the probable loss of amenity caused by disturbance to vegetation, a possible reduction in the area of pervious surface material, and disruption to the restful visual continuity of the reserve. Similarly, lookouts may be established provided they are not visually obtrusive, and are constructed and maintained in a manner such as to ensure public safety. Such proposals will be considered on an individual basis as they arise and in consultation with relevant staff and patrons. Where implemented, the style of materials used should be consistent with and within

the natural areas across Council and in keeping with an approved visual standards guide.

While ordinance signage is required in many locations to help restrict prohibited activities occurring within open space areas, the over usage of signs can significantly contribute to visual pollution and clutter. The installation of new signs should be assessed with regard to the level of usage of the reserve and the seriousness of prohibited activities.

Fences may be constructed to protect or restrict access to sensitive areas. As a general rule, the construction and maintenance of boundary fences are the responsibility of adjoining owners as described under the Dividing Fences Act, and Council does not contribute to fencing boundaries to private land.

Playground equipment is installed in only one natural area (Oatley Park) which has its own specific plan of management. The installation of play equipment in any other natural area is considered to be incompatible with the primary function of the land and is not supported by this plan.

Any remaining timber fuelled barbecues will be removed, due to the potential fire risk posed and the uncontrolled collection of firewood causing damage to vegetation and habitat. Their replacement with electric operated ones will be considered, requiring a probable rationalisation of the number and location.

Two publicly accessible boat ramps currently exist and will be maintained to safety requirements, however additional facilities will not be provided.

## 4.9 Safety & Risk Management

**Objective:** *To adequately maintain natural area resources and facilities, and to encourage respectful, law-abiding behaviour while using the natural areas to maximise public safety and minimise damage to resources and facilities.*

The need to provide for public safety is one of the greatest priorities for Council in the management of its open space areas, and Council has a duty of care to ensure all of its open space areas and associated facilities are safe to use. Risk management involves ensuring that all facilities are maintained to a high standard so that not only are severe accidents avoided, but also the likelihood of smaller injuries or damage is minimised.

Risk management procedures have been or are being progressively developed for specific sites or Council operated activities. The procedures outline communications and emergency procedures in the event of an accident or incident, and undertake a risk analysis and assessment to address occupational health and safety issues. These procedures will be gradually implemented as they are prepared and adopted.

The condition and appropriate maintenance requirements of all of Council's open space amenities is assessed on a quarterly basis. Predetermined maintenance levels are sustained to ensure that public liability insurance requirements are met. Any identified hazards are attended to as a priority. Where activities or facilities are found to be posing significant or increasing risk, swift preventative action may be taken and the public duly notified. Measures to improve the sustainability, such as the retrofitting of energy and water saving devices, of any existing buildings on the land to which this plan applies shall be carried out.

Risk minimisation also requires the reciprocal responsible behaviour of partons using the parks, whether it be as individuals or groups. All open space users have a duty of care to other members of the public, and to use the natural areas and facilities in a responsible and respectful manner. Appropriate signage will be in place to guide the public in their use of the natural areas where necessary.

The relative isolation and characteristics of natural areas present unique challenges for the protection of both the environment and visitors to these areas. Antisocial behaviour within open space areas is an ongoing concern, particularly behaviour that causes disturbance to the environment, to other users, adjoining owners, or causes damage to public or private property. Any credible reports of such behaviour reported through passive surveillance of open space areas by community members are welcomed by Council, and will be promptly followed up by staff or forwarded to police as appropriate. Such involvement can contribute to the public's perceived and actual ownership of open space, helping to keep it attractive to use by all members of the public, and can also help to reduce unnecessary maintenance costs or loss of biodiversity.

The use of pesticides (incorporating herbicides, insecticides and fungicides) to control weeds and damaging plant pests and diseases is done strictly in accordance with the requirements of the Pesticides Act 1999. Following the exhibition and adoption of a Pesticide Use Notification Plan in early 2007, public notification of the use of pesticides is given, in accordance with the requirements of the Plan. The only herbicide used on most open space areas is Glyphosate, a non-residual, non-specific systemic poison, non-toxic to humans and animals. However occasionally more specialised chemicals are used on areas with specific requirements such as to control aquatic weed outbreaks.

Fertilisers are not used in any natural areas and the only additional product used in any of the reserves is water storage crystals, to aid in plant establishment.

This plan authorises any necessary activities to be carried out during declared emergencies as may be decided by the General Manager. All work in any natural area is done in compliance with the requirements of the Occupational Health and Safety Act 2000.

Council aims to promote responsible consumption of alcohol within areas where it is permitted, and will work with the community to ensure that regulations governing the sale and consumption of alcohol are followed. Consumption of alcohol is prohibited on community land where it contravenes ordinance regulations. A liquor licence must be obtained in compliance with the Liquor Act 1982 and Liquor Regulations 1996 if the sale of alcohol is proposed within any reserve where its consumption is permitted by Council. Written approval to lodge a Liquor Licence application must also be obtained from Council before applying to the NSW Office of Liquor, Gaming & Racing for a Licence. Evidence of the licence must then be submitted to Council annually or for each event

## **4.10 Vegetation Management**

*Objective: To protect and preserve the remnant vegetation for its inherent biodiversity values and to reduce and control the impacts associated with adjacent human use of the areas.*

The protection and management of all of Council's vegetation remnants is the most critical and important issue to be addressed for the future of our natural areas. The bushland, and other wetland or foreshore vegetation, make the natural areas what they are, and should be preserved in as healthy and diverse a condition as possible. Natural vegetation communities are self sustaining and are subject to change and succession over time according to changes in environmental factors including climate, bushfires, or other disturbance. Reasons for the preservation of vegetation include its intrinsic worth; its value as habitat and refuge for native fauna; for the various environmental advantages provided by any green space (eg. shade, oxygen, soil stability etc); and for the obvious aesthetic, recreational and relaxation benefits it can provide that so many people appreciate.

### Natural Vegetation and Tree Management

The primary aim of vegetation management is to retain the distribution, abundance and diversity of native species and communities presently existing on the land, and where possible and appropriate to regenerate pre-existing natural communities. Where endemic bushland or remnant vegetation exists it will be maintained, regardless of size, and the variety and quality of vegetation present. Where possible, degraded remnants will be rehabilitated in accordance with the aims and objectives of Council's Bushcare program. Along watercourses, vegetation and natural hydrological processes will be retained.

Natural areas are best retained in closely adjoining areas as large as possible, with the minimum length of edges, although typically remnant areas tend to be linear and can be quite fragmented. As far as possible, vegetation corridors will be retained to link larger natural areas, to facilitate movement of native fauna and plants. All of the bushland is accessible to the public and much of it

adjoins private property. Adjacent property owners have a special responsibility to ensure human impacts on the bushland are minimised. Most residents do value and take care of our bushland and have an understanding of the sensitive nature of the backyard/bushland interface. However the dumping of green waste such as grass clippings, plant and weed material into the bush is thought by some to be a harmless activity that contributes to the natural decomposition cycle. This activity undermines the progress of bush regeneration work and contributes to the degradation of the remnant bush by encouraging weed regrowth, threatening native plant communities and wildlife habitats, looking unsightly and creating a potential bushfire hazard.

The impacts of associated human use on vegetation remnants will be minimised through the selective use of buffer zones, care by Bushcare groups where possible, and the control of encroachments from adjoining properties. Council will aim to avoid any further fragmentation of vegetation in natural areas from roads, tracks, services, and the like. Dominant native species should be retained and natural ecological processes allowed to continue without interference. Trees along foreshores are not to be cleared to provide for views, and native vegetation is to be retained on site.

Dead trees and branches are an essential part of the bushland ecosystem, providing habitat for a significant variety of fauna. Therefore it is important that as many of these hollow trees and branches as possible are kept. There may be some that occur along fire trails or paths that should be removed for safety reasons, and all trees will be maintained to create minimal public safety hazard. However each tree should be inspected individually for stability and its importance as habitat prior to removal being undertaken. If a hollow-bearing tree is required to be removed, any resident animals should be retrieved and released or rehoused by an appropriate wildlife handler. A diverse vegetation structure maintaining understorey species needs to be retained to maintain fauna habitat, and fallen logs (where they won't compromise human safety) and bushrock are to be retained and left undisturbed.

Any planting required to be undertaken within or adjoining natural areas will focus on the use of indigenous (genetic) plant material, grown from local provenance seed or cuttings. This will help preserve the original vegetation, and by providing preferred habitat will also ensure that native fauna have the best opportunity of competing with non native species. Council's Bushcare Native Nursery may be able to produce plant material for planting areas where the use of genetic provenance may be of importance.

Exotic ornamental plants that have been deliberately planted or accidentally germinated in bushland areas such as Coral trees or Jacarandas, may be selectively and gradually removed as they can impede on bush regeneration work and act as a potential weed source. Those non-local trees that have an historical or cultural significance may be retained, subject to community consultation, until they become a safety hazard. Replacement planting, with local species, may or may not be required depending upon the likelihood of natural regeneration. Formal and amenity gardens are not compatible with

retention of natural vegetation, and will not be constructed in or adjoining natural areas.

Specific and comprehensive bushland management plans need to be developed for each regeneration site, including a formal survey of existing flora, its condition and conservation status, and management requirements for particular species or communities identified. Completion of a comprehensive fauna survey is a current data gap that also needs to be undertaken as soon as possible, to help inform management decisions.

#### Weed Control

Weed control in natural areas refers to control of introduced and non indigenous plants. Weed invasion occurs in natural areas as a result of physical disturbance due to construction activity, clearing, or mowing; increased soil moisture due to runoff; increased nutrient availability from runoff or dumping; increased light levels due to clearing or dieback; and increases in weed propagules and seed dispersal agents.

Weeds and introduced species tend to outgrow, and smother native vegetation due to favourable growing conditions and a lack of effective pests or diseases. Weeds can also spread rapidly through pockets of native vegetation via creeklines and human track networks that transport seeds further beyond the immediate area in which an original outbreak occurred. This severely hinders the regeneration and replacement of canopy trees and contributes to the destruction of understorey, which in turn reduces biodiversity through simplification of the ecosystem.

Noxious weeds are species declared under the Noxious Weeds Act, 1993 and are plants posing a threat to the environment, the community, or agriculture. Noxious weeds are to be removed as soon as possible or otherwise controlled according to the conditions stated on an applicable local control order. There is a legal obligation on land owners and Council to remove or control these plants on their properties.

Measures are being and will continue to be implemented to control and manage the causes and processes that lead to weed invasion. Monitoring is to be undertaken to identify and respond to the occurrence of new plant species which pose a potential threat to natural areas. The techniques used to control weeds should aim to minimise negative environmental impacts. Different techniques are required in varying situations, particularly along watercourses, which are very sensitive to pollution impacts. An important part of control is the regular monitoring of weeds in natural areas on an ongoing basis. Any non native vegetation removed from the site is to be disposed of away from bushland to avoid spread of seed, or the introduction of additional nutrients.

To help manage and implement the control of weeds in natural areas, Council will continue to fund and support a Bushcare Program incorporating both in-house staff and volunteers. The Bushcare Program undertakes weed control in selected sites within the Council managed bushland and wetland areas.

The amount of regeneration achieved in areas under volunteer care is indicated by the number of volunteers and hours worked. Some contract regeneration is undertaken although this is usually carried out on a one-off needs basis rather than as a regular commitment, and generally involves primary site work or fuel reduction rather than detailed follow up work. A qualified Bushcare Officer supervises the volunteers while on site to ensure that correct techniques are implemented and the integrity of the bushland is protected.

Progressive encroachments from private property onto natural areas add to the incremental loss of bushland and can contribute to the introduction of unwanted species into the Park. The natural area boundaries will continue to be monitored by the Bushcare staff and any encroachments will be eliminated.

## 5.0 Policy and Performance

### Definition of Priorities used:

- |           |   |
|-----------|---|
| Immediate | - Action to be completed within 6 months      |
| High      | - Action to be completed within 6 - 24 months |
| Medium    | - Action to be completed within 2 - 4 years   |
| Low       | - Action commenced after 4 years              |
| Commenced | - Action has commenced                        |
| Ongoing   | - A continuing responsibility                 |
| Complete  | - Action is complete                          |
| Annually  | - Action to be undertaken on a yearly basis   |

### List of Abbreviations used:

- |         |  |
|---------|--|
| BCO     | - Bushcare Officer (includes Wetland Officer as appropriate) |
| CIM     | - Civil Infrastructure Manager                               |
| ECO     | - Environmental Compliance Officer                           |
| EO      | - Environmental Officer                                      |
| GIS     | - Geographical Information Systems                           |
| LGA     | - Local Government Area                                      |
| MPR     | - Manager – Parks & Recreation                               |
| PMM     | - Parks Maintenance Manager                                  |
| POM     | - Parks Operations Manager                                   |
| SLA     | - Service Level Agreement                                    |
| SRO     | - Sport & Recreation Officer                                 |
| SSRFAMC | - Southern Sydney Regional Animal Management Committee       |
| TMO     | - Tree Management Officer                                    |

## 5.1 Action Plan

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
<b>ACCESS</b>					
To provide appropriate levels of community access to Hurstville's natural areas whilst maintaining the integrity of the land and its biological resources	To maximise the identity of natural areas while limiting the amount of signage installed to minimise disturbance.	<p>Include natural areas in signage audit for all open space to determine what signage if any is required within natural areas.</p> <p>Ensure any natural areas nominated within audit to be signposted are named and provide clear signage in accordance with signage audit.</p> <p>Signage prepared in accordance with City-wide design standards.</p>	<p>Audit completed and works list prepared and prioritised.</p> <p>Nominated natural areas are appropriately named and signposted.</p> <p>Appropriate signage prepared and installed.</p>	Immediate	Parks Operations Manager (POM)
	To control vehicular access onto natural areas.	<p>Restrict motor vehicle access onto natural areas, except for Council vehicles required to carry out maintenance work, or emergency vehicles, with Council approval for special purpose.</p> <p>Prohibit granting permanent vehicular access to private property through open space. Temporary access may be granted subject to compliance with conditions imposed by Council.</p>	<p>Suitable gate and lock-up equipment to be installed. Keys provided to authorised maintenance and contract staff, and emergency personnel as required.</p> <p>No permanent vehicular access on to private property granted. Temporary access allowed subject to compliance with conditions imposed.</p>	Medium	POM
				Medium	POM
				Complete (equipment installed). Ongoing (key issue)	POM / Parks Maintenance Manager (PMM)
				Ongoing	MPR

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
To provide access to natural areas for all patrons.	To provide access to natural areas for all patrons.	Permits provided for special use access with Council approval. Permission sought in writing in advance, and granted for activities permitted as per Council Management Plan.	Permits for special use access considered and granted where compliant with conditions.	Ongoing	SRO, POM
		Ensure work vehicle and emergency access points are kept clear at all times.	Access points clear and available.	Ongoing	Environmental Compliance Officer (ECO)
		Give consideration to adjoining residents when parking vehicles and using natural areas.	Adjoining residents considered when parking vehicles and using natural areas.	Ongoing	Staff and natural area users
	To provide ease of thoroughfare for patrons into and through natural areas.	Construct and maintain walking tracks in appropriate locations.	Access into, around and within natural areas is maintained in a safe condition.	Commenced; Ongoing	POM / PMM
		Assess access benefits and environmental factors when considering construction of any pathways.	Access to natural areas weighed against environmental factors when constructing paths.	Ongoing	POM / PMM
		Assess value of existing tracks and close and rehabilitate any tracks that are non essential, poorly located, or that represent an erosion hazard.	Non-essential or hazardous tracks closed and rehabilitated.	Ongoing	PMM / BCO
	To maximise the accessibility of natural areas for mobility impaired patrons, whilst minimising disturbance to the natural environment.	In consultation with Council's Access Committee, undertake an audit of all natural areas to determine what is required to ensure wheelchair and other disability access.	Audit completed and works list prepared and prioritised.	Medium	POM, Community Services Officer

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Progressively budget for and install required facilities to improve disability access in appropriate locations and without creating detrimental impacts on native vegetation.	Mobility impaired patrons can safely utilise nominated areas. Areas to remain undisturbed where access is unfeasible.	Medium	POM
<b>BUSHFIRE MANAGEMENT</b>					
To manage natural areas understanding that fire is essential for the long term survival of the flora, but having regard to bushfire hazard & the need to reduce fuel loadings and maintain Fire Protection Zones.	Minimise fuel loadings in identified risk areas.	Undertake annual assessments of fuel loadings.	Fuel loads inspected.	Ongoing/annual	BCO / POM / NSW Fire Brigades
		Undertake manual removal of fuel where required.	Recommendations of NSW Fire Brigades adhered to.	Ongoing	BCO / POM
		Carry out hazard reduction burns where required by NSW Fire Brigades.	Burns carried out by NSW Fire Brigades.	Ongoing	BCO / POM / NSW Fire Brigades
		Minimise need for broadacre burns by regular use of pile & mosaic burning & other hazard reduction techniques.	Reduced need for broadacre burns.	Ongoing	BCO / POM / NSW Fire Brigades
		Burn in mosaic pattern to stimulate regeneration and maximise diversity.	Pile burns done by Fire Brigades, regeneration growth stimulated.	Ongoing	BCO / POM / NSW Fire Brigades
	Adhere to recommended fire frequency thresholds as per Bushfire Management Plan.	Burns undertaken no more than every 5 years (10 years for selected species), not less than every 30 years, as recommended for vegetation type/s.	Healthy ecosystems maintained. No species loss through too frequent burning.	Ongoing	BCO/ POM/ NSW Fire Brigades
	Prepare information about bushfire risk and minimisation procedures.	Include all natural areas in a revision of the existing BFMP.	All natural areas assessed for bushfire potential and proposed actions in review of BFMP.	High	MPR

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Prepare Evacuation Plan (as recommended in existing BFMP).	Evacuation Plan prepared and approved.	High	MPR
		Place signage in appropriate high use natural areas to alert patrons of hazard reduction activities.	Patrons aware of burns and other activities.	Ongoing	POM / BCO
		Undertake letterbox drops to adjoining properties before burning carried out.	Adjoining residents aware of burns.	Ongoing	BCO / NSW Fire Brigades
		Close natural areas in bushfire prone areas during periods of extreme/high fire danger.	Access points closed & signage displayed where present, and parks hotline updated during high fire danger.	Ongoing	POM
<b>ENVIRONMENTAL MANAGEMENT</b>					
To manage the natural environmental elements of natural areas to preserve biodiversity values and minimise disturbance.	Prohibit any development within bushland zone. Ensure integrity of natural areas is maintained by prohibiting development, except that required for essential services or maintenance.	No approvals for development works within natural areas except where endorsed by Council and the wider community for essential amenity purposes, and necessary approvals have been obtained.	No non essential works carried out within natural areas.	High; ongoing	MPR
		Allow placement of seating only along walking tracks & in lookout areas where suitable for rest points and views.	Seating selectively placed along tracks & in lookout areas.	Medium/ Low	POM
		Prepare biodiversity evaluation report for consideration for any proposed significant works.	Biodiversity evaluation report prepared and considered for any proposed works.	High	EO, BCO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Works within natural areas shall be undertaken to minimise disturbance, and restore areas following works to maximum extent. On site resources will be used and retained on site wherever possible.	Disturbance to natural areas minimised.	High; ongoing	POM / PMM
	All maintenance and essential activities to be undertaken ensuring that environmental protection, pollution control and health guidelines are strictly applied and complied with.	Implement silt control techniques to prevent soil erosion and sedimentation.	Silt control implemented.	Ongoing	POM / PMM, BCO
		Stockpile materials on a temporary basis only and isolate piles to prevent contamination. Situate away from the base of mature trees.	Materials stockpiled to minimise impacts.	Ongoing	POM / PMM, BCO
		Ensure conditions are in place to prevent impacts such as soil erosion, compaction, run-off, and the introduction of weed species.	Environmental impacts prevented.	High; ongoing	POM / PMM, BCO
		Maintain permeable ground surfaces wherever possible to ensure maximum absorption capabilities.	Ground surfaces remain unsealed.	Ongoing	POM / PMM
		Encourage disposal of stormwater on site.	On-site stormwater disposal implemented; run-off and impacts reduced.	Ongoing	POM / PMM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Maintain natural hydrological processes, to maintain creek line stability and plant community health.	Natural waterway functions retained.	High; ongoing	POM / PMM, BCO
		No reclamation, filling or draining of any land permitted which results in loss of or disturbance to natural habitats.	No land reclamation or filling allowed, and no loss of habitat.	High; ongoing	MPR
		Only permit drainage works where complementary to the natural drainage patterns on the land, and where essential to protect tracks, roads, services, or other facilities on the land.	Natural drainage patterns retained, and services and facilities maintained in good condition.	Ongoing	POM / PMM, BCO
		incorporate pollution control measures into drainage systems to minimise debris, nutrients and other chemicals entering the waterway.	Pollution controls implemented; pollutants reduced and minimised.	Medium	
		Leave acid sulphate soils undisturbed wherever possible.	Acid sulphate soils remain unexposed.	Ongoing	MPR
		Encourage use of buffer zones for development works on private property adjoining natural areas.	Buffer zones implemented.	High; ongoing	BCO; Development Assessment staff
		Rubbish dumping on public land, including garden waste, is prohibited. Incidences will be followed up.	Reports of dumping pursued in accordance with legislation and current education and policing program.	High; ongoing	BCO, ECO
		Waste material should be disposed of off site and in a manner not affecting the natural vegetation or that encourages the spread of weeds.	Correct disposal of waste implemented.	Ongoing	BCO, POM / PMM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Rubbish bins will only be provided in natural areas in high use and accessible locations, and adjacent to any existing amenities.	Number of bins in natural areas kept to a minimum.	Low	POM
<b>FAUNA</b>					
To protect indigenous fauna and their habitat, encourage responsible use of natural areas by pet owners, and limit the effects of invasive animals on native wildlife and vegetation	Provide habitat for native fauna.	Use local plant stock for all revegetation.	Local plant material used.	High/ ongoing	BCO / PMM
		Revegetate to provide a complete vegetation structure ie. overstorey, understorey and ground covers represented.	Complete vegetation structure represented in planting activities.	Ongoing	BCO
	Encourage tolerance and understanding of habits of other native 'nuisance' fauna.	Prepare brochure, signage or other info on native animals of the LGA.	Brochure prepared, information available on website, signage installed as appropriate.	Medium	EO/ CLU
		Educate patrons to leave native animals alone.	Incidences of disturbed fauna minimised..	Ongoing	BCO, CLU
	To minimise the impacts of invasive animals on natural areas where possible.	Implement invasive animal control in natural areas where possible.	Invasive animal issues addressed promptly	Ongoing	BCO, EO, ECO
		Keep record of fox sightings.	Database of reports of fox activity kept.	Ongoing	EO
		Set fox trap/s – baited and monitored by Bushcare volunteers.	Trap/s monitored regularly.	Ongoing	BCO
		Inspect reports of fox den sightings, and fumigate if suitable.	Fox dens located and suitability for fumigation identified.	Ongoing	BCO, Pest Control Contractor
		Pursue regional approach to baiting through SSRAMC, acknowledging that distance restrictions for bait placement are currently prohibitive.	Participation and support for feasibility into regional baiting program.	Medium	EO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Inspect regularly for feral insect pests and treat ASAP by pest controller if found.	Inspections carried out and any outbreaks controlled.	As reported/ongoing	BCO
		Use endemic plant species to encourage local bird species over aggressive non-local species.	Gradual increase in local species and decrease in hybrid species.	Ongoing	OPBO/ adjoining owners
		Request (via letterbox material) adjoining owners use local plants in landscaping to favour local fauna.	Increase in use of local plant species by neighbours.	Ongoing	EO/ BCO
	To educate, monitor and enforce Companion Animals Act regulations, and encourage responsible behaviour of pets within natural areas.	Leave dead trees and branches for hollows.	Habitat left for birds/fauna where possible.	Ongoing	BCO / TMO
		Pets to be kept on lead at all times within natural areas. (Note: off-lead areas located within sportsgrounds).	Minimal or reduced reports of breaches and incidents.	Ongoing	Pet owners, ECO
		Pets to be cleaned up after by owners.	Minimal or reduced reports of breaches.	Ongoing	Pet owners, ECO
		Prohibited animals (eg. horses) kept out of natural areas	No reports of breaches or damage.	Ongoing	All patrons
		Spot inspections by Compliance Officers.	Compliance by patrons, or fines issued.	Ongoing	ECO
<b>FUNDING</b>					
To maximise funding opportunities for the preservation and maintenance of natural areas and any associated services and facilities.	To provide sufficient core funding to maintain natural areas and facilities to agreed service standards, and embellish funding base with grants and sponsorship where possible.	Allocate natural areas funding based on maintenance requirements of reserves and facilities, user needs and numbers, and inflation costs. Revise and adjust annually.	Budget allocation is sufficient to cover ongoing maintenance costs for each natural area and all incorporated structures and facilities. Annual expenditure not to exceed allocation.	Ongoing	Manager – Parks & Recreation (MPR)

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Apply appropriate charges to the use of selected venues and facilities to assist with cost recovery. Revise and adjust fees annually and publish in list of Fees & Charges in Council Management Plan.	Fees for use of selected facilities imposed. Equitable distribution of fees and charges in relation to the facility.	Ongoing	MPR
		Prepare grant applications for suitable projects as opportunities arise.	Grant applications prepared under all appropriate funding programs.	Ongoing	MPR, BCO
		Pursue sponsorship opportunities for suitable programs or events, in accordance with Council's sponsorship policy and ICAC guidelines.	Sponsorship funding considered and secured for selected programs or events.	Medium	BCO, PMM
<b>MANAGEMENT &amp; USE</b>					
To manage natural areas efficiently and effectively, and allow for their equitable use for a range of informal and passive recreational activities that are compatible with management objectives and the function of natural areas.		Provide for a variety of informal and passive recreational activities as an ancillary function of natural areas.	Passive recreation catered for where it does not conflict with preservation objectives.	Ongoing	MPR
		Sporting activities prohibited from natural areas due to likelihood of disturbance to vegetation and habitat.	Sporting activities prohibited from natural areas.	Ongoing	MPR
		Discourage and prohibit as necessary any activities that interfere with the peace and ecological diversity of natural areas.	Inappropriate activities discouraged and prohibited as necessary.	Ongoing	MPR, PMM, ECO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Prohibit damaging activities including the collection of fauna and flora, rocks, soil, timber or leaf litter, horse riding, and the clearing of vegetation for views or for any other purpose.	Damaging activities prohibited, and policed. Reduced or minimal reported incidences.	Ongoing	POM / PMM, MPR
		Permit cycling within natural areas on constructed roads and tracks only, and not on walking tracks or off-road in bushland areas.	Cycling permitted within natural areas on constructed tracks only. Reporting of breaches.	High; ongoing	POM, ECO
		Allow the use of natural areas for hosting of special cultural events only (eg. guided bushwalks) that do not conflict with conservation aims.	Conditional, temporary permits granted for appropriate cultural events. Staging of events complies with Council regulations.	Ongoing	MPR, SRO
		Applications for filming within natural areas considered in accordance with Council policy 3-524, subject to Council approval, compliance with conditions of consent, payment of fee and bond, and no disruption to the primary use and function of the site.	Filming permitted with Council approval, compliance with consent conditions and payment of relevant fees.	Ongoing	POM, Manager - Environmental Services
		Hosting of circuses and carnivals not permitted within natural areas in accordance with Council policy 3-004.	Applications to host circuses and carnivals declined.	Ongoing	SRO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Issue leases and licences for use of natural areas where appropriate, where it will not impact on the natural values of the land, and made in compliance with the requirements of the Local Government Act 1993 and other relevant legislation and policy.	Leases and licences granted for up to five years in compliance with legislative requirements and Council policy.	Ongoing	MPR
	To manage natural areas to maximise benefit to the community and ensure that management operations complement the use of the reserves.	Promote natural areas to the community to raise public awareness of the values of the land and its components..	Information available to public, including on Council's website.	Ongoing	MPR, SRO
		Review the Plan of Management regularly to conserve, maintain and enhance the values and characteristics of the parks.	Annual review undertaken.	Ongoing	EO
		Allow for public participation in the Plan of Management review process.	Public participation invited and comments incorporated in review process.	Ongoing	EO
		Preserve any built or natural heritage items occurring on natural areas in accordance with conditions on Council's heritage register.	Condition of heritage items maintained.	Ongoing	POM / PMM
		Accept dedications of land as natural area reserves if the land is accessible and is of sufficient size and character to be manageable and effective as a functioning natural area,	Land dedications accepted if values and conditions met.	Low	MPR

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Only consider small land dedications if they support significant ecological values or landscape features, are accessible, and in good condition. Ongoing maintenance requirements must also be considered.	Small natural area land dedications accepted if they meet conditions of ecological value, access, status and maintenance requirements.	Low	MPR
	To provide a limited booking service for natural areas that is fair and equitable.	Allow for the casual hire of selected natural areas, where facilities exist, with fees set at an appropriate rate in accordance with Council's three year Management Plan.	Casual hire of selected natural areas permitted, and applicable fees imposed.	Ongoing	SRO
		Waive hire charges subject to Council approval for community groups, charities and some approved special events. Application to be made in writing (in advance).	Hire charges waived subject to conditions met.	Commenced, ongoing	SRO
	To minimise any impacts of natural areas on surrounding residences and to minimise conflict between different users of the land.	Allow use of open space for recreational activities during daylight hours, and discourage night use.	Use of natural areas permitted during day.	Ongoing	POM / PMM
		Ensure security patrols are made where appropriate.	Patrols carried out according to approved schedule.	Ongoing	POM
		Follow up concerns about noise, security and privacy with affected residents.	Concerns followed up promptly.	Ongoing	POM / PMM, ECO
		Restrict specific uses of the natural areas that may result in excessive noise pollution to the neighbouring community outside regular hours of use.	Restriction of events and activities causing high noise pollution.	Medium	SRO, POM / PMM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Maintain correct boundaries of natural areas and remove any encroachments onto public land.	Boundaries maintained and encroachments are removed promptly.	Commenced, ongoing	POM / PMM
	To optimise the use of natural areas and permit access across open space where appropriate.	Allow temporary or permanent easements over natural areas to private property where appropriate and in compliance with the requirements of the Local Government Act 1993 and other relevant legislation and policy. Strict controls on vegetation and land management may be imposed.	Easements permitted where legal and policy requirements met.	Ongoing	MPR
		Develop a summary checklist/application form (in consultation with Council's Solicitors) to ensure all easement applications comply with the relevant sections of the Local Government Act 1993 and other relevant legislation and policy.	Checklist developed and utilised for all applications.	Immediate	MPR, Planning staff
		Impose placement of a bond to protect the natural areas and associated assets.	Bond payment lodged as part of application approval.	Ongoing	MPR
		All costs associated with the application and construction, and any legal fees to be borne by the applicant.	Costs not incurred by Council.	Ongoing	MPR, Manager – Development Advice

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Allow for easements over natural areas where appropriate for stormwater control, dispersal and flood control subject to Council approval and in compliance with the provisions of the Local Government Act 1993.	Stormwater easements allowed in compliance with legislative requirements and Council policy.	Ongoing	MPR
		To clarify and resolve conflicting or inconsistent land information details in consultation with the relevant authorities/land managers.	Consult with Department of Lands to confirm ownership status of land, parcel boundaries and classification of land within Lime Kiln Bay Reserve (Oatley Heights Park) to consider reallocation of Lot PT315 DP 13827 adjoining Hurstville Golf Course. Update Council records.	Medium	GIS staff, Planning staff, EO
			Consult with Geographical Names Board to consider addition of Lot 1 DP793262 to official Heinrich Reserve listing.	Medium	MPR, EO
<b>MANAGEMENT OF DUAL USE AREAS</b>					
To manage areas with multiple land categorisation contained within natural areas according to the requirements of their core objectives.	To ensure the management, maintenance and use of natural areas does not adversely affect the management and use of adjoining areas with alternative core functions.	Distinguish non-natural area use zones occurring within natural area boundaries where necessary for management purposes.	Distinct areas identified as required.	Immediate	EO, POM
		Ensure all areas, particularly those with environmental sensitivity, are maintained in accordance with SLAs and legal requirements, and are used in an appropriate manner by patrons.	Areas maintained and used appropriately.	Ongoing	All staff

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Educate natural area users on the potential impacts of inappropriate use on the natural environment.	Patrons advised of impacts as required.	Ongoing	EO
<b>NATURAL AREAS AND COMMUNITY FACILITIES</b>					
To provide and maintain, within budget, natural areas of high quality and minimal but appropriate amenity, aesthetic and landscaping facilities to maximise benefits for all users and to minimise ecosystem disturbance.	To provide facilities catering for an appropriate range of passive recreational activities compatible with the nature and function of natural areas, and the management objectives of this plan.	Active and sporting recreation facilities will not be provided within natural areas.	Active recreation catered for within other more appropriate Council areas.	Immediate; ongoing	MPR
		Undertake audit of existing assets.	Audit completed.	High	Asset Manager
		Develop budgeted maintenance plan for long term upgrade of existing assets.	Maintenance plan prepared.	High	Asset Manager
		Undertake specific improvements and additions to facilities within natural areas in accordance with an approved schedule of works, as funds permit. Essential amenities will be considered for high use areas only.	Improvements and additions undertaken according to works schedule and funds allocated.	Ongoing	POM, Asset Manager
		Submit Development Applications for any proposed amenities to be built or upgraded in the natural areas in accordance with Council's Local Environmental Plan.	New facilities developments comply with Hurstville Council's Local Environmental Plan.	Ongoing	SRO, MPR

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Prohibit the installation of radio and telecommunications devices within natural areas where possible, and consult with authorities on design, siting and installation of low impact facilities where required.			
		Encourage service and utility suppliers to comply with guidelines of this plan, and to undertake community consultation where essential services are required.	Guidelines complied with and community consultation undertaken.	Ongoing	MPR
		Investigate the acquisition of properties which will enhance the ecological or amenity potential of a natural area where they become available and subject to appropriate allocation of funding.	Suitable properties acquired with allocated funding.	Low	MPR
		Assess the level of provision, quality, condition, and accessibility of facilities eg. seating, formal steps, paths and handrails. Design, budget for and construct new facilities or upgrade existing facilities as required. Materials used should be visually sympathetic to natural environment.	Provision of amenities is appropriate to demand.	High, ongoing	POM / PMM
		Construct and maintain formal paths or surfaces in high use areas where need identified to reduce wear and damage to environment.	Formalised surfaces in place where needed to protect vegetation.	Medium	POM / PMM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Lighting not be provided in natural areas, except where essential for public safety and the protection of assets. Consider solar lighting options to improve sustainability and reduce energy costs.	Lighting installed where essential and solar lighting investigated as a priority.	Medium	POM / PMM
	Undertake relevant actions to ensure natural areas and any associated facilities are maintained to appropriate standards in accordance with the specifications detailed in Council's Service Level Agreements and allocated resources.	Implement maintenance of natural areas eg. mowing, weeding, graffiti removal etc.	Maintenance in accordance with SLAs & industry standards.	Ongoing	POM / PMM, BCO, Park maintenance staff
		Monitor pesticide use within natural areas and adjust types and quantities as necessary to obtain optimum benefits and minimise risk.	Monitoring undertaken and adjustments made as required.	Ongoing	POM / PMM
		Undertake notification of pesticide use in accordance with Pesticide Use Notification Plan 2007.	Public appropriately notified of pesticide use in accordance with Plan.	Ongoing	POM
		New plants established using water storage crystals and watered by water cart contractor where necessary, and in accordance with water restrictions and exemptions. Allow remaining areas to be irrigated by rainfall only.	New vegetation only watered additional to rainfall, and according to determined need, and complying with water restrictions and exemptions.	Ongoing	POM / PMM
		Investigate and implement where practicable new and improved materials and techniques to maintain optimum quality facilities.	Improved materials and techniques implemented as they are developed.	Ongoing	POM / PMM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		All work undertaken by Council staff and contractors is consistent with the objectives of this Natural Areas Plan of Management.	Objectives of Plan are met.	Ongoing	All staff and contractors
<b>SAFETY AND RISK MANAGEMENT</b>					
To adequately maintain natural area resources and facilities, and to encourage respectful, law-abiding behaviour while using the natural areas to maximise public safety and minimise damage to resources and facilities	To maintain natural areas to provide for public safety and to minimise Council's exposure to complaints, compensation claims and litigation.	Undertake an audit of any structures within natural areas and budget for and undertake repairs as required.	Audit complete and a schedule of works identified and budget for repairs allocated.	Commenced	Asset Manager, POM
		Undertake regular inspections of natural areas to determine potential risks.	Inspections of natural areas undertaken and any required work undertaken.	Ongoing	POM / PMM
		Make repairs to infrastructure within determined response times.	Repairs made within given timeframe.	Ongoing	CIM (Civil Infrastructure Manager)
		All employees to undertake all work in compliance with safety regulations under the OH&S Act 2000.	Work done in compliance with OH&S regulations.	Ongoing	All staff and contractors
		All pesticide use to be undertaken in accordance with the Pesticides Use Notification Plan	Pesticide Use Notification Plan implemented.	Commenced; ongoing	POM / PMM
		Annual public liability insurance policy maintained.	Council covered by suitable public liability insurance.	Complete	Manager – Supply & Risk
	To minimise the incidence and effects of vandalism to natural areas and associated facilities.	Remove any graffiti as soon as practicable.	Graffiti removed within determined response time.	Ongoing	CIM
		Use anti-graffiti materials (eg. on signs, painted surfaces, etc) where possible and cost effective.	Reduced incidence of graffiti on treated surfaces.	High, ongoing	PMM / POM, CIM

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Repair vandalised items and facilities as soon as practicable.	Repairs made as soon as parts and labour available.	Ongoing	POM / PMM, CIM
		Where damage is ongoing and persistent, investigate suitable alternative materials or a possible change in service level to prevent unnecessary costs and inconvenience.	Reduction in damage where alternative materials are used.	Ongoing	POM, CIM
		Carry out patrols of the natural areas in response to requests and on a regular basis as scheduling permits.	Patrols carried out in response to requests.	Ongoing	ECOs
		Obtain cost and feasibility of after-hours surveillance & monitoring of selected areas. Implement with Council and budget approval.	After hours damage and vandalism prevented or reduced.	High	POM, Contract Security
		Prohibit consumption of alcohol within natural areas, where indicated by ordinance regulations.	Alcohol consumption prohibited in designated areas.	Ongoing	ECO
		Review and update signage indicating prohibition of alcohol consumption as necessary.	Signage updated as necessary.	High	POM
<b>VEGETATION MANAGEMENT</b>					
To protect and preserve the remnant vegetation for its inherent biodiversity values and to reduce and control the impacts associated with adjacent human use of the areas	To manage and maintain areas of natural vegetation efficiently, effectively and in accordance with the provisions of SEPP 19 and other relevant environmental legislation.	Retain and maintain endemic bushland or remnant vegetation regardless of size, and the variety and quality of vegetation present.	All remnant vegetation is retained and maintained.	Ongoing	BCO / PMM
		Retain vegetation and natural hydrological processes along watercourses and within wetlands.	Hydrological processes within natural areas are retained.	Ongoing	BCO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
1. Protect and manage natural areas.	1.1. Manage natural areas.	Remove noxious and environmental weeds and encourage natural regeneration of indigenous plant species where possible.	Weed control and Bushcare activities and programs are implemented and supported.	Ongoing	POM / PMM, BCO, TMO
		Eliminate encroachments and rubbish dumping onto reserves by identifying boundaries and removing inappropriate plants and materials.	Property boundaries identified where necessary and respected. Letterbox drops or ordinance controls issues as appropriate.	Medium	POM / PMM
		Continue to apply for grant funding to support Bushcare rehabilitation projects.	Grant funding applications submitted for qualifying Bushcare projects.	Ongoing	BCO
	1.2. Promote natural areas.	Maintain permanent Bushcare Officers, Wetland Officer and in-house Bushcare staff to manage natural area vegetation.	Bushcare staff positions funded and supported by Council.	High	Council, MPR
		Continue to fund and support the Volunteer Bushcare Program, to increase the area of bushland able to be managed and to provide opportunities for the community to assist with its ongoing care.	Volunteer Bushcare Program funded and supported by Council.	High	MPR / PMM
		Prepare Bushland Management Plans for specific reserves.	Bushland Management Plans prepared.	High; ongoing	BCO
		Update flora survey, using earlier National Trust survey as reference base.	Survey update complete.	High	BCO
	1.3. Protect rare or threatened species.	Undertake fauna survey.	Fauna survey complete.	High	External consultant
		Identify numbers and locations of ROTAP species or populations.	Species & number of ROTAP identified.	High	BCO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
Core Objective 1: Protect and manage park vegetation and flora.	Protect and manage park vegetation and flora.	Develop and implement plant protection measures.	Protection measures put in place.	High	BCO
		Ensure other park maintenance staff are aware of plant locations and procedures in place.	Staff made aware, no accidental loss of species.	High	BCO
		Propagate where possible.	Seed and/or cutting propagation attempted.	Medium	BCO
	Remove noxious and environmental weeds, encourage natural regeneration of indigenous plant species.	Maintain Volunteer Bushcare Program and continue to promote to wider community. Aim to gradually expand areas worked with increased numbers and skills of volunteers.	Maintain current Bushcare sites and expand when numbers, skills, and time make it possible.	Ongoing	BCO
		Reduce reliance on contract labour for primary and reactionary weed control. Increase follow up work and commitment to areas weeded.	Minimum areas opened up for primary work. Follow up work committed.	Ongoing	OPBO
		Attempt to identify sources of weed incursions and implement appropriate actions to limit and reduce their impacts.	Weed sources identified and controlled where possible.	Ongoing	BCO
		Remove or control declared noxious weeds in accordance with legislative requirements.	Noxious weeds managed in accordance with legal requirements.	Ongoing	BCO / TMOs
		Dispose of non native vegetation in a suitable location away from the natural areas.	Weed and other non native vegetation material disposed of appropriately off-site.	Ongoing	BCO / PMM
	Implement tree preservation practices and manage trees for fauna habitat, and environmental and aesthetic benefits.	Assess dead trees and branches where overhanging trails or paths and posing a potential hazard. Inspect individually for safety, stability and habitat value.	Trees & branches inspected individually and assessed on merits before action taken.	Ongoing	TMO / BCO

CORE OBJECTIVE	OBJECTIVE	ACTION	INDICATOR	PRIORITY	RESPONSIBILITY
		Leave dead trees & branches in bushland for habitat where they will not pose threat to patron safety.	Trees, branches retained for habitat where possible, removed where hazardous.	Ongoing	TMO/Park staff
		Where hollow-bearing trees are required to be removed, inspect for resident animals and engage a qualified wildlife handler to retrieve, and release or rehouse fauna.	Any resident animals are appropriately handled in tree removal situations.	Ongoing	BCO / TMO
		Any tree health issues to be dealt with promptly. Required tree surgery to be carried out by Council staff where possible or approved and qualified arboriculture professionals.	Response time to inspection and maintenance in accordance with service delivery standards. Healthy and safe tree population within parks.	Ongoing	TMO, Horticultural or Parks maintenance staff or arboricultural contractors
		Where revegetation is required, tree replacement to be of appropriate local species.	Appropriate replacement tree species selected.	Ongoing	POM / PMM, TMO

## Appendix 1

### Schedule of Land – Natural Areas

Name	Category	Address	DP	Lot	Area (m <sup>2</sup> )	Sheet	Comments
<b>LUGARNO</b>							
Banksia Place Reserve	Natural Area (Bushland)	14A Banksia Place 19D Banksia Place	260664 262415	3 55	13,080.0 253.0	7	Total area: 13,333m <sup>2</sup>
Cedar Street Reserve South (Crown)	Natural Area (Bushland)	27A Cedar Street	93160	7055	19,858.0	3	Adjoins Georges River National Park; Crown land
Edith Bay Wetland	Natural Area (Wetland)	1085 Forest Road 1085 Forest Road	562308 752056	2 273	2,452.0 2,873.0	2	Sydney Water pumping station on site. Total area: 5,325.0m <sup>2</sup>
Evatt Park Foreshore Reserve	Natural Area (Bushland)	64A Renway Avenue 64D Renway Avenue 53D Valentia Avenue	659200 659199 235359	1 1 1	550.1 12,450.0 72,042.0	7	Incorporates Renway Ave Reserve Total area: 85,042.1m <sup>2</sup>
Heinrich Reserve	Natural Area (Bushland); part Natural Area (Foreshore)	10 Bayside Drive 40 Bayside Drive 40D Bayside Drive 2 Bayside Drive	237063 573022 232089 793262	45 3 26 1	1,404.0 4,141.0 5,552.0 4,650.0	5	Part NA (Foreshore) at 2 & 40D Bayside Dr. Lot 1 DP793262 not included in reserve in GNB listing. Total area: 15,747.0m <sup>2</sup>
Lugarno Parade Reserve	Natural Area (Bushland); part General Community Use	182 Lugarno Parade 200 Lugarno Parade 1218D Forest Road	29596 752056 43752	9 181 1	1,246.0 21,401.2 1,495.0	2	1218D Forest Rd subject to electricity easement. Total area: 24,142.2m <sup>2</sup>
Moons Avenue Reserve	Natural Area (Bushland)	55A Moons Avenue	27735	X	3,244.0	3	
Murdock Crescent Reserve	Natural Area (Bushland); part Natural Area	4 Murdock Crescent 10 Murdock Crescent	566335 220656	PT1 23	10,589.0 202.3	8	Total area: 19,997.5m <sup>2</sup>

Name	Category	Address	DP	Lot	Area (m <sup>2</sup> )	Sheet	Comments
	(Foreshore); part Gen Community Use	22 Murdock Crescent 24 Murdock Crescent 40A Boyd Avenue	220656 220656 30190	22 24 20	120.1 335.1 8,751.0		
Ponderosa Place Reserve	Natural Area (Bushland)	21A Brewer Place 21A Brewer Place 21A Brewer Place Brewer Place road closure	255711 255711 255711 -	3 4 5 -	949.1 174.7 89.4 1,569.3	6	Total area: 2,782.5m <sup>2</sup>
Salt Pan Creek Reserve	Natural Area (Bushland); part Natural Area (Foreshore)	964A Forest Road 24 Cypress Drive 19D Redgum Drive 2D Tallowwood Avenue 2C Tallowwood Avenue 40 Grandview Crescent	880971 239902 221569 224413 560128 29857	65 23 25 16 21 Z	1,537.0 6,374.0 10,470.0 6,551.0 446.4 2,883.0	8	Total area: 28,261.4m <sup>2</sup>
Woodlands Avenue Reserve East	Natural Area (Bushland)	77D Woodlands Avenue 79D Woodlands Avenue	601259 615754	23 33	558.0 480.0	4	Reclaimed, end 77-79A Woodlands Ave Total area: 1,038.0m <sup>2</sup>
Woodlands Avenue Reserve West	Natural Area (Bushland)	51D Woodlands Avenue	589800	4	735.7	4	Reclaimed, rear 51A-53 Woodlands Ave
Woodlands Avenue Road Reserve (RR)	Natural Area (Bushland)	Woodlands Avenue unmade road			7,846.0	4	Road reserve, cnr Boronia Pde West
<b>OATLEY</b>							
Freeman Avenue Reserve	Natural Area (Bushland)	30 Freeman Avenue	536699	2	6,108.0	9	No CV Park ID
Lime Kiln Bay Reserve (Bay Road Reserve)	Natural Area (Wetland) Natural Area (Bushland)	Lime Kiln Bay Wetlands 2 Bay Road 10 Bay Road 14 Bay Road 14 Bay Road	- 3230 3230 3230 409863	- 1-4/12 5-6/12 7-13/12 Y	26,933.0 5,416.5 1,789.5 8,694.4 1,170.0	10	Consolidation of Lime Kiln Bay Wetlands, Bay Road Reserve, Glen Road Reserve, & Oatley Heights Park Total area: 170,458 m <sup>2</sup>

Name	Category	Address	DP	Lot	Area (m <sup>2</sup> )	Sheet	Comments
		14 Bay Road 14 Bay Road 36 Bay Road 2A Bay Road 23A Waterfall Rd Road reserve next to 23A Waterfall Rd	410478 413355 387999 3230 3230 -	B 16B 4 18-22/12 23/12 -	1,309.0 1,442.0 7,354.0 7,261.6 882.7 842.6		
(Glen Road Reserve) (Oatley Heights Park)	Park Natural Area (Bushland)	2A Glen Road 2A Glen Road 36 Barwon Road 37 Barwon Road	455336 3230 13827 13827	1-7 8-10/3 PT315 271-273	6,466.5 3,654.8 93,650.0 3,591.6		Approx area only, no survey done.
Marine Drive Reserve (RR)	Natural Area	Adjacent No. 35 Marine Drive	-	-		11	Road reserve
Meyer Reserve	Natural Area (Bushland/Water Course)	140 Gungah Bay Road Adj 140 Gungah Bay Rd	11934 -	364 -	5,830.0 770.0	11	Also known as Gungah Bay Reserve Total area: 6,600.0m <sup>2</sup>
Myles Dunphy Reserve	Natural Area (Bushland/Water Course/Wetland); part Gen Community Use	35 River Road 40 River Road 40P River Road 77P Waratah Street 77P Waratah Street 119D Woronora Parade 119D Woronora Parade 119D Woronora Parade 119D Woronora Parade 117-119D Woronora Parade 34 Mimosa Street 34D Mimosa Street 38 Mimosa Street Unmade road adj 40 River Rd	7124 7124 7124 7124 7124 7124 7124 7124 7124 7124 7124 7124 564191 7124 -	14-20/3 1-10/4 17-23/27 9-16/27 16-20/4 9A/26 10-20/26 27 25-29/26 24/26 4-6/26 1 1-2/26 -	8,043.1 10,117.0 7081.9 9,086.4 5,058.5 1618.7 14,435.8 1,011.7 5,058.5 1,011.7 5,488.0 556.4 2,826.5 4,054.7	12	Total area: 82,986.8m <sup>2</sup>  Gen Community Use (Scout Hall) on Lot 24/26 DP 7124

Name	Category	Address	DP	Lot	Area (m <sup>2</sup> )	Sheet	Comments
		Unmade road adj Myrtle St Unmade road adj Waratah St	- -	- -	3,643.4 3,894.5		
Oatley Park	Natural Area (Bushland); part Sportsground; part Park	1 Dame Mary Gilmore Drive 3 Dame Mary Gilmore Drive	752056 727277	13 542	454,900.0 24,610.0	9	Baths area (Lot 542 DP 727277) below MHWM Total area: 479,510m <sup>2</sup>
Park Avenue Reserve	Natural Area (Bushland)	Adj 80 Oatley Park Avenue	-	-	2,183.7	9	Nature strip area adjoining school grounds
Yarran Road Reserve	Natural Area (Bushland); part Natural Area (Foreshore)	93 Yarran Road 93A Yarran Road 86D Yarran Road 86D Yarran Road 86E Yarran Road 7D Southern Street Unmade road adj 93 Yarran Rd	237552 542604 396537 219763 521880 548815 -	5 1 B 1 1 3 -	3,908.0 1,840.0 2,207.0 1,631.0 1,088.0 733.5 2,367.0	13	Total area: 13,774.5m <sup>2</sup>
<b>PEAKHURST</b>							
Clarendon Road Reserve (Crown)	Natural Area (Foreshore); part Natural Area (Bushland)	Clarendon Road Clarendon Road Rear 43 & 47 Clarendon Rd Rear 5-65 Elwin Street Unmade road west end of Clarendon Rd	1026873 1026873 - - -	7093 7094 - - -	373.3 318.0 1,180.0 18,884.0 1,097.5	15	Total area: 21,852.8m <sup>2</sup> Areas approx only for lots with no available land information.
Ogilvy Street Reserve North	Natural Area (Bushland); part Natural Area (Water Course)	77C Ogilvy Street 77C Ogilvy Street	774559 564799	4 3	721.0 923.4	14	adj Georges River NP Total area: 1,644.4m <sup>2</sup>
Ogilvy Street Reserve South	Natural Area (Bushland)	115 Ogilvy Street	216143	7	461.6	14	
Belmore Road Reserve Middle	Natural Area (Bushland); part Natural Area	53A Belmore Road	593400	4	313.0	14	Reclaimed foreshore

Name	Category	Address	DP	Lot	Area (m <sup>2</sup> )	Sheet	Comments
	(Foreshore)						
Belmore Road Reserve North	Natural Area (Bushland); part Natural Area (Foreshore)	63 Belmore Road	1101533	103	291.3	14	Acquired in October 2000
Belmore Road Reserve South	Natural Area (Bushland); part Natural Area (Foreshore)	37B Belmore Road 31A Belmore Road	800498 740857	173 5	247.9 320.0	14	Reclaimed foreshore Total area: 567.9m <sup>2</sup>
<b>PEAKHURST HEIGHTS</b>							
Jinna Road Reserve	Natural Area (Foreshore); part Park	Jinna Road	-	-	7,408.0	16	Reclaimed land, no land information available, area approx.
Peakhurst Foreshore Reserve	Natural Area (Bushland); part Natural Area (Foreshore)	24D View Street 9A Brittany Place 1D Alsace Lane 19A Alsace Lane 228625 228625 49D Rainbow Parade 73D Waterside Parade 55D Waterside Parade 49D Waterside Parade 522691 25D Waterside Parade 222460 25D Waterside Parade	225452 243076 10 19 228625 18 229840 229829 220523 12 522691 2 222460 18 211604	26-27 10 19 18 27 11 20,990.0 12 3,421.0 607.0 3,465.0 95	6,646.0 872.6 493.2 2,719.0 4,806.0 20,990.0 3,421.0 607.0 3,465.0 12,730.0	16	Total area: 56,749.8m <sup>2</sup> Previously known as Lime Kiln Bay Reserve. 49D Waterside Pde & 1D Alsace Ln are drainage reserves ie. operational land.
<b>RIVERWOOD</b>							
Lillian Road Reserve (Crown)	Natural Area (Wetland); part Natural Area (Foreshore); part Park	50 Lillian Road Adj 50 Lillian Road Adj railway land End of Lillian Rd (between lots 7067 & 7068)	207755 1026876 1026876 -	13 7067 7068 -	3,971.0 475.3 324.1 805.4	17	Crown land (lots 7067, 7068); Lot 13 zoned part residential. Total area: 5,575.8m <sup>2</sup>

(RR) = Road Reserve

## APPENDIX 2 – Native Plant Species

FAMILY NAME	BOTANIC NAME	COMMON NAME
<b>PTERIDOPHYTA (Ferns and Fern allies)</b>		
Adiantaceae	<i>Adiantum aethiopicum</i> <i>Adiantum hispidulum</i>	Common Maidenhair Rough Maidenhair Fern
Aspleniaceae	<i>Asplenium australasicum</i> <i>Asplenium flabellifolium</i>	Bird's Nest Fern Necklace Fern
Blechnaceae	<i>Blechnum</i> sp. <i>Doodia aspera</i>	Water Fern Rasp Fern
Cyatheaceae	<i>Calochlaena dubia</i> <i>Cyathea australis</i>	Common Ground Fern Rough Treefern
Davalliaceae	<i>Davallia pyxidata</i>	Hare's-foot Fern
Dennstaedtiaceae	<i>Histiopteris incisa</i> <i>Pteridium esculentum</i>	Bat's-wing Fern Bracken Fern
Gleicheniaceae	<i>Gleichenia dicarpa</i> <i>Gleichenia rupestris</i>	Coral Fern
Lindsaeaceae	<i>Lindsaea linearis</i> <i>Lindsaea microphylla</i>	Screw Fern Lacy Wedge Fern
Polypodiaceae	<i>Platycerium bifurcatum</i>	Elkhorn
Psilotaceae	<i>Psilotum nudum</i>	Skeleton Fork Fern
Selaginellaceae	<i>Selaginella uliginosa</i>	Swamp Selaginella
Sinopteridaceae	<i>Cheilanthes distans</i> <i>Cheilanthes sieberi</i>	Cloak Fern Poison Rock Fern
Thelypteridaceae	<i>Christella dentata</i>	
<b>GYMNOSPERMAE (Cycads and Conifers)</b>		
Podocarpaceae	<i>Podocarpus elatus</i> <i>Podocarpus spinulosus</i>	Plum Pine Native Pine
Zamiaceae	<i>Macrozamia communis</i>	Burrawang
<b>ANGIOSPERMAE</b>		
<b>Dicotyledons (Flowering Plants)</b>		
Acanthaceae	<i>Brunoniella pumilio</i>	Dwarf Blue Trumpet
Aizoaceae	<i>Tetragonia tetragonoides</i>	New Zealand Spinach
Amaranthaceae	<i>Alternanthera denticulata</i>	Lesser Joyweed
Apiaceae	<i>Actinotus helianthi</i> <i>Actinotus minor</i> <i>Platysace ericoides</i> <i>Platysace lanceolata</i> <i>Platysace linearifolia</i> <i>Trachymene incisa</i> <i>Xanthosia pilosa</i> <i>Xanthosia tridentata</i>	Flannel Flower Lesser Flannel Flower Heath Platysace Lance-leaf Platysace Narrow-leaf Platysace  Hairy Xanthosia
Apocynaceae	<i>Parsonia straminea</i>	Common Silkpod
Araliaceae	<i>Polyscias sambucifolia</i>	Elderberry Panax
Asclepiadaceae	<i>Marsdenia suaveolens</i>	Scented Mink Vine
Asteraceae	<i>Cassinia aculeata</i> <i>Cassinia aureonitens</i> <i>Cassinia laevis</i> <i>Epaltes australis</i> <i>Euchiton gymnocephalum</i>	Dolly Bush Yellow Cassinia Cough Bush Spreading Nut-heads Creeping Cudweed

FAMILY NAME	BOTANIC NAME	COMMON NAME
	<i>Euchiton sphaericum</i> <i>Gnaphalium involucratum</i> (= <i>Euchiton involucratus</i> ) <i>Lagenifera gracilis</i> <i>Olearia microphylla</i> <i>Olearia viscidula</i> <i>Ozothamnus diosmifolius</i> <i>Senecio quadridentatus</i>	Cudweed Cudweed Blue Bottle-daisy Small-leaf Daisy Bush Sticky Daisy Bush White Dogwood Cotton Fireweed
Avicenniaceae	<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove
Baueraceae	<i>Bauera rubioides</i>	Dog Rose
Bignoniaceae	<i>Pandorea pandorana</i>	Wonga Wonga Vine
Campanulaceae	<i>Wahlenbergia communis</i> <i>Wahlenbergia gracilis</i>	Tufted Bluebell Native Bluebell
Cassythaceae	<i>Cassytha</i> sp.	Devil's Twine
Casuarinaceae	<i>Allocasuarina littoralis</i> <i>Casuarina glauca</i>	Black She-oak Swamp Oak
Chenopodiaceae	<i>Einadia hastata</i> <i>Sarcocornia quinqueflora</i>	Saloop Samphire
Clusiaceae	<i>Hypericum gramineum</i>	Small St John's Wort
Commelinaceae	<i>Commelina cyanea</i>	Scurvy Weed
Convolvulaceae	<i>Calystegia marginata</i> <i>Dichondra repens</i> <i>Polymeria calycina</i>	Bind Weed Kidney Weed Bindweed
Crassulaceae	<i>Crassula sieberiana</i>	Australian Stonecrop
Cunoniaceae	<i>Callicoma serratifolia</i> <i>Ceratopetalum gummiferum</i>	Black Wattle Christmas Bush
Dilleniaceae	<i>Hibbertia diffusa</i> <i>Hibbertia fasciculata</i> <i>Hibbertia monogyna/circumdans</i> <i>Hibbertia nitida</i> <i>Hibbertia scandens</i>	Bundled Guinea Flower Shining Guinea Flower Climbing Guinea Flower
Droseraceae	<i>Drosera auriculata</i> <i>Drosera peltata</i>	Pale Sundew
Elaeocarpaceae	<i>Elaeocarpus reticulatus</i>	Blueberry Ash
Epacridaceae	<i>Astroloma humifusum</i> <i>Astroloma pinifolium</i> <i>Brachyloma daphnoides</i> <i>Epacris longiflora</i> <i>Epacris microphylla</i> <i>Epacris pulchella</i> <i>Leucopogon amplexicaulis</i> <i>Leucopogon ericoides</i> <i>Leucopogon juniperinus</i> <i>Monotoca elliptica</i> <i>Monotoca scoparia</i> <i>Styphelia laeta</i> var. <i>laeta</i> <i>Styphelia tubiflora</i> <i>Woollsia pungens</i>	Native Cranberry Pine Heath Daphne Heath Fuschia Heath Coral Heath  White Beard Prickly Beard-heath Tree Broom Heath Prickly Broom-heath Five Corners Red Five-corners Woollsia
Euphorbiaceae	<i>Amperea xiphoclada</i> <i>Breynia oblongifolia</i> <i>Glochidion ferdinandi</i> var. <i>ferdinandi</i> <i>Glochidion ferdinandi</i> var. <i>pubens</i> <i>Micranthemum ericoides</i>	Broom Spurge Breynia Cheese Tree Cheese Tree

FAMILY NAME	BOTANIC NAME	COMMON NAME
	<i>Omalanthus nutans</i> ( <i>populifolius</i> ) <i>Phyllanthus hirtellus</i> <i>Poranthera ericifolia</i> <i>Poranthera microphylla</i> <i>Ricinocarpos pinifolius</i>	Bleeding Heart Thyme Spurge Heath-leaved Poranthera Small Poranthera Wedding Bush
Fabaceae Faboideae	<i>Bossiaea ensata</i> <i>Bossiaea heterophylla</i> <i>Bossiaea scolopendria</i> <i>Daviesia corymbosa</i> <i>Desmodium gunnii</i> <i>Dillwynia retorta</i> <i>Glycine clandestina</i> <i>Glycine microphylla</i> <i>Glycine tabacina</i> <i>Gompholobium glabratum</i> <i>Hardenbergia violacea</i> <i>Hovea linearis</i> <i>Kennedia rubicunda</i> <i>Pultenaea daphnoides</i> <i>Pultenaea linophylla</i> <i>Pultenaea stipularis</i> <i>Viminaria juncea</i>	Plank Plant Bitter-pea Tick-trefoil Eggs & Bacon Love Creeper Love Creeper Glory Pea Native Sarsaparilla Narrow-leaf Hovea Dusky Coral Pea Large-leaf Bush-pea Fine-leaf Bush-pea Native Broom
Fabaceae Mimosoideae	<i>Acacia brownii</i> <i>Acacia decurrens</i> <i>Acacia echinula</i> <i>Acacia hispidula</i> <i>Acacia linifolia</i> <i>Acacia longifolia</i> var. <i>longifolia</i> <i>Acacia myrtifolia</i> <i>Acacia parramattensis</i> <i>Acacia prominens</i> <i>Acacia suaveolens</i> <i>Acacia terminalis</i> <i>Acacia ulicifolia</i>	Prickly Moses Green Wattle Hooked Wattle Rough-leaf Wattle Flax-leaved Wattle Sydney Golden Wattle Myrtle-leaf Wattle Sydney Green Wattle Gosford Wattle Sweet-scented Wattle Sunshine Wattle Prickly Moses
Geraniaceae	<i>Pelargonium inodorum</i>	
Goodeniaceae	<i>Dampiera stricta</i> <i>Goodenia bellidifolia</i> <i>Goodenia hederacea</i> <i>Scaevola ramosissima</i>	Blue Dampiera Ivy Goodenia Fan Flower
Haloragaceae	<i>Gonocarpus teucrioides</i>	Raspwort
Juncaginaceae	<i>Triglochin striata</i>	Streaked Arrowgrass
Lauraceae	<i>Cassytha pubescens</i>	Devil's Twine
Lobeliaceae	<i>Lobelia alata</i> <i>Lobelia dentata</i> <i>Lobelia gracilis</i> <i>Pratia purpurascens</i>	Angled Lobelia White Root
Loganiaceae	<i>Mitrasacme pilosa</i> <i>Mitrasacme polymorpha</i>	Mitre Worts Mitre Weed
Loranthaceae	<i>Amyema congener</i> ssp. <i>congener</i> <i>Muellerina celastroides</i>	Mistletoe Mistletoe
Moraceae	<i>Ficus rubiginosa</i>	Port Jackson Fig
Myoporaceae	<i>Myoporum acuminatum</i>	Boobialla
Mysinaceae	<i>Aegiceras corniculatum</i>	River Mangrove

FAMILY NAME	BOTANIC NAME	COMMON NAME
	Rapanea howittiana Rapanea variabilis	Brush Muttonwood Muttonwood
Myrtaceae	Angophora bakeri Angophora costata Angophora floribunda Angophora hispida Callistemon linearis Callistemon pinifolius Corymbia gummifera Eucalyptus capitellata Eucalyptus pilularis Eucalyptus piperita Eucalyptus punctata Eucalyptus sclerophylla Kunzea ambigua Leptospermum polygalifolium Leptospermum trinervium Melaleuca ericifolia Melaleuca linariifolia Melaleuca thymifolia	Narrow-leaved Apple Sydney Red Gum Rough-barked Apple Dwarf Apple Narrow-leaf Bottlebrush Pine-leaved Bottlebrush Red Bloodwood Brown Stringybark Blackbutt Sydney Peppermint Grey Gum Scribbly Gum Tick Bush Yellow Tea-tree Flaky-barked Tea-tree Swamp Paperbark Honey Myrtle
Oleaceae	Notelaea longifolia	Mock Olive
Oxalidaceae	Oxalis exilis Oxalis perennans Oxalis thompsoniae	
Pittosporaceae	Billardiera scandens Bursaria spinosa Pittosporum revolutum Pittosporum undulatum	Dumplings Blackthorn Rough-fruit Pittosporum Native Daphne
Polygalaceae	Comesperma ericinum Comesperma sphaerocarpum	Match Heads Broom Milkwort
Polygonaceae	Persicaria decipiens	Slender Knotweed
Portulacaceae	Calandrinia sp.	Purslane
Primulaceae	Samolus repens	Creeping Brookweed
Proteaceae	Banksia ericifolia Banksia integrifolia Banksia oblongifolia Banksia serrata Banksia spinulosa Conospermum ericifolium Conospermum longifolium ssp. angustifolium Grevillea buxifolia ssp. sphacelata Grevillea mucronulata Grevillea sericea Hakea dactyloides Hakea sericea Isopogon anemonifolius Isopogon anethifolius Lambertia formosa Lomatia silaifolia Persoonia hirsuta ssp. hirsuta Persoonia laurina ssp. laurina Persoonia levigata	Heath-leaved Banksia Coast Banksia  Old Man Banksia Spine leaf Banksia Smoke Bush Long-leaf Coneseeds  Grey Spider Flower Green Spider Flower Pink Spider Flower Broad-leaf Hakea Needle Bush Drumsticks Drumsticks Mountain Devil Crinkle Bush Hairy Geebung Laurel Geebung Broad-leaved Geebung

FAMILY NAME	BOTANIC NAME	COMMON NAME
	<i>Persoonia linearis</i> <i>Petrophile pulchella</i> <i>Xylomelum pyriforme</i>	Fine-leaved Geebung Conesticks Woody Pear
Ranunculaceae	<i>Clematis glycinoides</i>	Old Man's Beard
Rhamnaceae	<i>Cryptandra amara</i> <i>Pomaderris intermedia</i> <i>Pomaderris ferruginea</i> <i>Pomaderris lanigera</i>	Rusty Pomaderris Woolly Pomaderris
Rubiaceae	<i>Morinda jasminoides</i> <i>Opercularia aspera</i> <i>Opercularia varia</i> <i>Pomax umbellata</i>	Morinda Coarse Stinkweed Variable Stinkweed Pomax
Rutaceae	<i>Correa reflexa</i> <i>Crowea saligna</i> <i>Philotheeca scabra ssp scabra</i> <i>Zieria pilosa</i> <i>Zieria smithii</i>	Common Correa Wax Flower Hairy Zieria Sandfly Zieria
Santalaceae	<i>Exocarpos cupressiformis</i> <i>Exocarpos strictus</i> <i>Leptomeria acida</i> <i>Omphacomeria acerba</i>	Native Cherry Dwarf Cherry Native Currant Leafless Sour-bush
Sapindaceae	<i>Dodonaea triquetra</i>	Hop Bush
Scrophulariaceae	<i>Veronica plebeia</i>	Trailing Speedwell
Stackhousiaceae	<i>Stackhousia viminea</i>	Slender Stackhousia
Sterculiaceae	<i>Lasiopetalum ferrugineum var. ferrugineum</i> <i>Lasiopetalum rufum</i>	Rusty Petals Red Rusty Petals
Styliadiaceae	<i>Stylium graminifolium</i> <i>Stylium productum</i>	Grass Trigger Plant Trigger Plant
Thymelaeaceae	<i>Pimelea linifolia</i>	Slender Rice Flower
Tremandraceae	<i>Tetratheca neglecta</i>	Black-eyed Susan
Ulmaceae	<i>Trema aspera</i>	Native Peach
Verbenaceae	<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum
Violaceae	<i>Hybanthus monopetalus</i>	Lady's Slipper
<b>Monocotyledons</b>		
Anthericaceae	<i>Caesia parviflora</i> <i>Laxmannia gracilis</i> <i>Thysanotus tuberosus</i> <i>Tricoryne elatior</i> <i>Tricoryne simplex</i>	Pale Grass-lily Wire Lily Fringed Lily Yellow Rush-lily Yellow Rush-lily
Blandfordiaceae	<i>Blandfordia nobilis</i>	Christmas Bells
Colchicaceae	<i>Burchardia umbellata</i>	Milkmaids
Cyperaceae	<i>Baumea juncea</i> <i>Carex breviculmis</i> <i>Carex inversa</i> <i>Caustis flexuosa</i> <i>Chorizandra cymbalaria</i> <i>Cyperus laevis</i> <i>Gahnia aspera</i> <i>Gahnia sieberiana</i> <i>Lepidosperma concavum</i> <i>Lepidosperma laterale</i> <i>Lepidosperma neesii</i>	Bare Twig Rush Knob Sedge Curly Sedge Bristle-rush  Rough Saw-Sedge Red-fruited Saw-sedge  Variable Sword-sedge Stiff Rapier Sedge

FAMILY NAME	BOTANIC NAME	COMMON NAME
	<i>Schoenus melanostachys</i> <i>Tetraria capillaris</i>	Black Bog-rush
Haemodoraceae	<i>Haemodorum planifolium</i>	Bloodroot
Hypoxidaceae	<i>Hypoxis hygrometrica</i>	Golden Weather-grass
Iridaceae	<i>Patersonia glabrata</i> <i>Patersonia sericea</i>	Leafy Purple-flag Purple Iris
Juncaceae	<i>Juncus continuus</i> <i>Juncus krausii</i> <i>Juncus remotiflorus</i> <i>Juncus usitatus</i>	Sea Rush  Common Rush
Lomandraceae	<i>Lomandra confertifolia</i> ssp. <i>rubiginosa</i> <i>Lomandra cylindrica</i> <i>Lomandra filiformis</i> ssp. <i>coriacea</i> <i>Lomandra filiformis</i> ssp. <i>filiformis</i> <i>Lomandra gracilis</i> <i>Lomandra longifolia</i> <i>Lomandra micrantha</i> <i>Lomandra multiflora</i> <i>Lomandra obliqua</i>	Needle Mat-rush Wattle Mat-rush Wattle Mat-rush Spiny-headed Mat-rush Small-flowered Mat-rush Many-flowered Mat-rush Twisted Mat-rush
Luzuriagaceae	<i>Eustrephus latifolius</i>	Wombat Berry
Orchidaceae	<i>Acianthus fornicatus</i> <i>Caladenia catenata</i> <i>Calochilus paludosus</i> <i>Calochilus robertsonii</i> <i>Corybas fimbriatus</i> <i>Cryptostylis erecta</i> <i>Dipodium punctatum</i> <i>Diuris maculata</i> <i>Dockrillia linguiformis</i> <i>Erythrorchis cassythoides</i> <i>Glossodia major</i> <i>Hyperanthus suaveolens</i> <i>Microtis rara</i> <i>Microtis unifolia</i> <i>Pterostylis acuminata</i> <i>Pterostylis concinna</i> <i>Pterostylis curta</i> <i>Pterostylis longifolia</i> <i>Pterostylis nutans</i> <i>Pterostylis parviflora</i> <i>Spiranthes sinensis</i>	Pixie Caps White Caladenia Red Beard Orchid Purple Bearded Orchid Fringed Helmet Orchid Bonnet Orchid Hyacinth Orchid Donkey Orchid Tongue Orchid Climbing Orchid Waxlip Orchid Brown Beaks Scented Onion Orchid Common Onion Orchid Pointed Greenhood Trim Greenhood Blunt Greenhood Tall Greenhood Nodding Greenhood Baby Greenhood Ladies Tresses
Phormiaceae	<i>Dianella</i> sp. <i>Dianella caerulea</i> var. <i>producta</i> <i>Dianella longifolia</i> <i>Dianella revoluta</i> <i>Thelionema caespitosum</i>	Blue Flax Lily Paroo Lily Blue Flax Lily Black-anther Flax Lily Tufted Blue Lily
Poaceae	<i>Agrostis avenacea</i> <i>Anisopogon avenaceus</i> <i>Aristida ramosa</i> var. <i>ramosa</i> <i>Aristida vagans</i> <i>Aristida warburgii</i> <i>Austrodanthonia racemosa</i> <i>Austrodanthonia tenuior</i>	Blown Grass Oat Spear Grass Purple Wiregrass Threeawn Speargrass Speargrass Wallaby Grass Wallaby Grass

<b>FAMILY NAME</b>	<b>BOTANIC NAME</b>	<b>COMMON NAME</b>
	<i>Austrostipa pubescens</i> <i>Cymbopogon refractus</i> <i>Deyeuxia quadriseta</i> <i>Dichelachne micrantha</i> <i>Dichelachne parva</i> <i>Digitaria parviflora</i> <i>Digitaria ramularis</i> <i>Echinopogon caespitosus</i> <i>Echinopogon ovatus</i> <i>Entolasia marginata</i> <i>Entolasia stricta</i> var. <i>hirsuta</i> <i>Entolasia stricta</i> var. <i>stricta</i> <i>Entolasia whiteana</i> <i>Eragrostis benthamii</i> <i>Eragrostis brownii</i> <i>Imperata cylindrica</i> var. <i>major</i> <i>Microlaena stipoides</i> <i>Notodanthonia longifolia</i> <i>Oplismenus aemulus</i> <i>Oplismenus imbecillis</i> <i>Panicum simile</i> <i>Paspalidium distans</i> <i>Phragmites australis</i> <i>Poa affinis</i> <i>Poa labillardieri</i> <i>Tetrarrhena juncea</i> <i>Themeda australis</i>	Tall Speargrass Barbwire Grass Bent Grass Shorthair Plumegrass Plumegrass Small-flowered Finger Grass Finger Grass Hedgehog Grass Forest Hedgehog Grass Bordered Panic Wiry Panic Wiry Panic Panic Lovegrass Brown's Lovegrass Blady grass Weeping Grass Longleaf Wallaby Grass  Two Colour Panic  Common Reed Poa Poa Grass Wiry Ricegrass Kangaroo Grass
Restionaceae	<i>Lepyrodia scariosa</i>	Scale-rush
Smilacaceae	<i>Smilax australis</i> <i>Smilax glyciphylla</i>	Wait-a-while Vine Sweet Sarsaparilla
Xanthorrhoeaceae	<i>Xanthorrhoea arborea</i> <i>Xanthorrhoea media</i>	Grass Tree Grass Tree

## **Appendix 3**

### **Natural Areas Maps**

#### **List of Maps**

<b>Sheet</b>	<b>Parks Illustrated</b>	<b>Suburb</b>	<b>Scale</b>
1	Natural Areas Overall Location Map	All	1:35000
2	Edith Bay Wetland; Lugarno Pde Reserve	Lugarno	1:2000
3	Cedar St Reserve Sth; Moons Ave Reserve	Lugarno	1:3500
4	Woodlands Ave Road Reserve; Woodlands Ave Reserves East & West	Lugarno	1:3000
5	Heinrich Reserve	Lugarno	1:1500
6	Ponderosa PI Reserve	Lugarno	1:1500
7	Banksia PI Reserve; Evatt Park Foreshore Reserve	Lugarno	1:5000
8	Murdock Cres Reserve; Salt Pan Creek Foreshore Reserve	Lugarno	1:3500
9	Freeman Ave Reserve; Oatley Park; Park Ave Reserve	Oatley	1:6000
10	Lime Kiln Bay Reserve (incl. Bay Rd Reserve, Glen Rd Reserve, Oatley Heights Park)	Oatley	1:5000
11	Marine Dr Reserve; Meyer Reserve	Oatley	1:3500
12	Myles Dunphy Reserve	Oatley	1:3000
13	Yarran Rd Reserve	Oatley	1:1500
14	Belmore Rd Reserves Nth, Middle, Sth; Ogilvy St Reserves Nth & Sth	Peakhurst	1:3000
15	Clarendon Rd Reserve	Peakhurst	1:4000
16	Jinna Rd Reserve; Peakhurst Foreshore Reserve	Peakhurst Heights	1:4500
17	Lillian Rd Reserve	Riverwood	1:1500