



Bonaira Native Garden

Plan of Management

Adopted

14 December 2004

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1.0 INTRODUCTION

1.1 Background

The land covered by this plan is known as Bonaira Native Garden and includes public land located between Reid Street, Girrawheen Avenue and the Bonaira playing fields. (*Figure 1*). It is public land owned by the Kiama Municipal Council and has been classified “Community” land under the provision of the Local Government Act 1993.

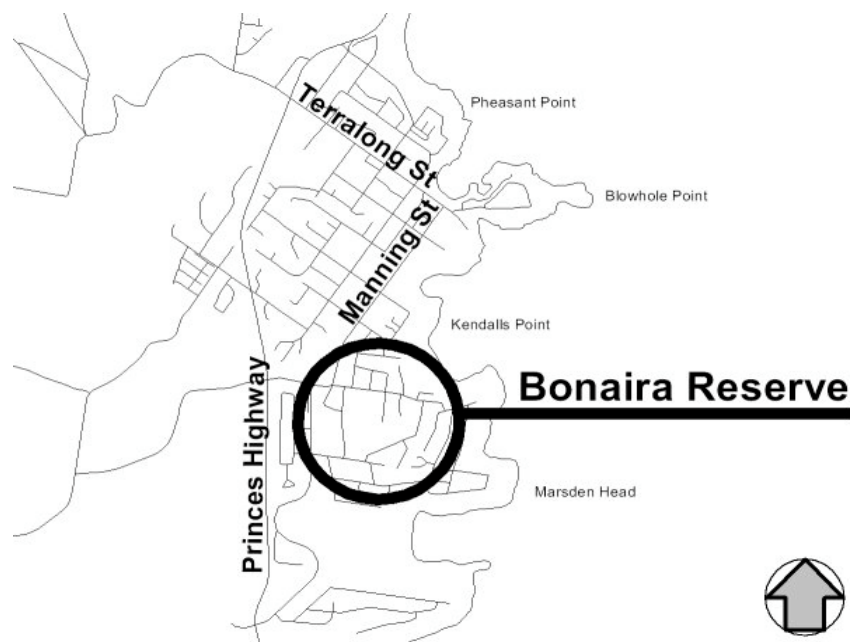


Figure 1

The Local Government Act also requires that Council prepare a Plan of Management in conjunction with the community to identify the important features of the land, clarify how Council will manage the land and how the land may be used or developed.

Until a Plan of Management for Community Land is adopted, the nature and use of the land cannot be changed and Council cannot carry out new development or improvements to the land.

The land is presently included in the Bushland Reserves Plan of Management that was adopted as a generic Plan of Management for a number of reserves of this nature in June 1996. This Draft Plan of Management is being prepared as a timely review of the existing plan and also in response to changes in the Local Government Act of 1993 brought about by the Local Government Amendment Act 1998.

It has been prepared in order to achieve a balanced, responsible and ecologically sustainable use of the land and to ensure that it addresses the needs of both local neighbourhood groups and the broader community. It has been prepared to meet the requirements of the Local Government Amendment Act 1998.

1.2 Community Land Covered by the Plan

The Community Land covered by this plan is shown in *Figure 2*. It comprises part of Lot 492, DP 208118 which has an area of 3.66 hectares. In addition to the Community Land, the area occupied by the native garden also includes an unformed part of Kendall Street along part of the northern boundary adjoining Kiama Hospital.

The Community land is zoned as Open Space Existing Recreation 6(a) under Kiama Council's Local Environmental Plan 1996. The unformed part of Kendall Street is zoned Residential (2a) and Special Uses Hospital 5(a). The site area adjoins housing zoned Residential 2(a) and the Bonaira playing fields zoned Open Space Existing Recreation 6(a).

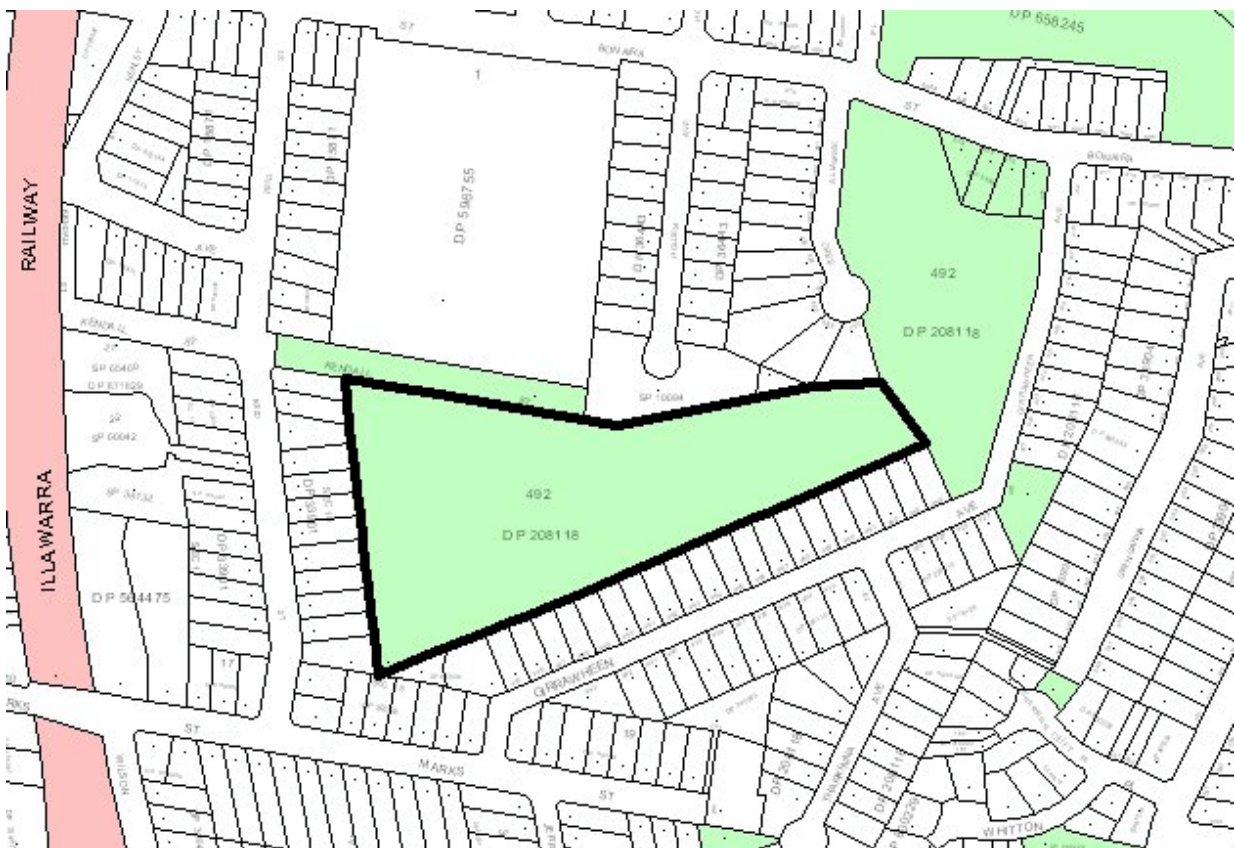


Figure 2

1.3 Category and Class of Land

The land included in this plan is classified as Community Land under the Local Government Amendment Act 1998.

Under Section 36(4) of the Local Government Amendment Act 1998, all Community Land must be categorised as one following categories:

- Natural Area – Bushland, Watercourse, Wetland, Escarpment
- Sportsground
- Park
- Area of Cultural Significance
- General Community Use

It is considered that the land should be categorised as “Natural Area - Bushland”. This category accurately reflects the physical characteristics of the site and the most appropriate use of the site.

1.4 Function and Value

The bushland area provides opportunities for passive recreation for casual recreation, bird watching and enjoyment of the open space. The reserve also has a purely intrinsic value - worth derived simply from its existence as open space and the value of the remnant Subtropical Rainforest present on the site. It serves as a valuable habitat for native fauna and a reminder of the vegetation that once covered the area around Kiama.

The shared pathway between Reid Street and the Bonaira Playing Fields provides a safe off road facility for pedestrians and cyclists forming part of the route linking Kiama, Kendalls Beach and Kiama Heights.

1.5 Preparation of a Plan of Management

The process undertaken in the preparation of a Plan of Management for Council owned Community Land must follow the steps and requirements set down under the Local Government Act 1993. These steps are:

- Prepare the draft plan.
- Council must give public notice of the existence of the draft plan.
- The draft plan is to be exhibited for at least twenty-eight (28) days and a submission period of at least 42 days during which submissions may be made to Council.
- Hold a public hearing in respect of the plan if the proposed plan categorises Community Land under Section 36 (4) or (5) of the Local Government Amendment Act 1998.
- Consider all submissions made to the public hearing and any written submissions made to Council on the draft plan during the period of public exhibition. Council may then decide to amend the draft plan or to adopt the plan without amendment.
- Should the draft plan require significant amendment then the public consultation process (exhibition and submission period) must be re-held. Another public hearing is not required.
- Subject to no further amendments being required, the Plan of Management is then formally adopted by Council.

1.6 Community Participation

Community consultation is a fundamental source of information necessary to provide the most efficient and effective Plan of Management for Community Land.

Such participation creates the opportunity for interested parties to become actively involved in the development of a plan which reflects the needs, opinions and priorities of the people most affected by the plan itself.

A number of meetings have been held with residents prior to the preparation of the draft plan. In addition, a formal public hearing will be held in order for people to make verbal submissions on the draft plan. The community will also have the opportunity to make written submissions on the plan during the exhibition of the draft plan.

2.0 PHYSICAL FEATURES AND CONDITION OF THE LAND AND STRUCTURES AND USES

2.1 General Biophysical Conditions

The reserve is located in the downstream section of a small valley which eventually drains to Kendalls Beach. A small unnamed watercourse meanders through the site. On the northern side, the valley is steep sided due to the presence of a latite scree slope. A small flood plain forms the broad central area in the reserve. This is an open grassed area at present. The remainder of the site is covered with native vegetation. Some of this, mainly on the northern scree slope, was present when rehabilitation and revegetation works commenced in approximately 1982. At the eastern end of the site the native garden adjoins the Bonaira playing fields. This end of the site is exposed to strong north–easterly winds.

These revegetation works were commenced following a report presented to Council by Ms Denise Black. Intensive work was undertaken on the site in the following five years to regenerate the remnant rainforest. This involved substantial clearing of a very serious invasion of the area by lantana, blackberry and many other environmental weeds and exotic plants. This work has been very successful in regenerating and enhancing the remnant bushland on the site.

In the past three years, work has concentrated on removing primary species such as Acacias, Commersonia etc, that were planted to establish a canopy and assist in suppressing weed growth in the early stages of revegetation. Many of these trees have reached the end of their life and fulfilled that purpose. These are being gradually removed and replaced with more permanent species.

Soils are well structured krasnozems derived from the underlying geology – the Gerringong volcanics or stony lithosols on the steeper slopes; the latter are prone to erosion. Therefore, retention of vegetation on the steeper slopes is important in preventing erosion.

2.2 Existing Facilities

A shared pathway, partly concrete and partly bitumen, extends through the site from Reid Street to the Bonaira Playing Fields. The only other facilities on the site are two picnic tables and two seats. A commemorative plaque for the local Wadi Wadi Aboriginal people is located adjacent to the shared pathway.

2.3 Existing Uses

The area is used as a quiet, passive recreation area for people to enjoy whilst observing the birdlife and vegetation. This is in keeping with the existing Plan of Management and the original decision of Council in 1982 to develop the reserve by regenerating the remnant native bushland. Although the shared pathway is available for cyclists, this activity does not detract from the use of the reserve.

3.0 COUNCIL'S OVERALL PLANNING FRAMEWORK

Council has defined a number of fundamental or corporate goals that are to be addressed in any future development of their parks and recreation areas. These goals form an overarching framework for all the more detailed objectives and strategies in this plan.

3.1 Aim of this Plan of Management

- To develop a Plan of Management for the reserve to comply with the Local Government Act 1993 and the Local Government Amendment Act 1998 and which is consistent with Council's corporate goals and policies. The plan should also achieve a balanced, responsible and ecologically sustainable use of the land and ensure that it addresses the needs of both the local community groups and the broader community.

3.2 Corporate Goals

Parks and Recreation:

- To provide and maintain an open space system which meets the diverse needs of the community and enhances the quality of the natural environment and the quality of life.

Other:

- To provide an efficient and effective delivery of services which is responsive to the community's needs.
- To promote the principle of ecological sustainability in environmental planning through implementation of Council's environmental goals.
- To develop an organised culture which encourages innovation and flexibility and which strives for continual improvement.
- To exercise the regulatory functions of Council consistently and without bias.
- To encourage community participation in the processes of Council by consulting widely on its activities and policies.



4.0 COUNCIL POLICIES

Council has developed a number of general policies in the planning, management and maintenance of community land and Council reserves. Any strategies and actions proposed in this plan must be consistent with these policies.

4.1 Planning

Council will:

- Consider and attempt to balance the need for community recreation facilities with the impact development of such sites will have on local residents;
- Attempt to balance the provision of active and passive recreational facilities;
- Consider access to recreational facilities for young families and disabled users;
- Integrate access for disabled users in plans for future developments;
- Limit facilities on the site to those facilities which are compatible with the objectives of the Plan of Management;
- Attempt to provide safe pedestrian links and corridors between components of the open space network; and
- Have regard to Council's Environmental Goals and Biodiversity Policy when approving works on the site.

4.2 Management

Council will:

- Reserve the right to control the use of, and access to, Community Land;
- Create opportunities for community consultation and participation in the planning and development of Community Land; and
- Facilitate a system whereby enquires and complaints from the public can be efficiently and promptly dealt with.

4.3 Development of New, and Improvement of Existing, Facilities

Council approval is required prior to any development or improvement made to Community Land.

All major developments and improvements to be funded (solely or partially) by Council will be approved through inclusion in Council's Capital Works Schedule.

Works included in Council's Capital Works Program will be funded from income generated from Council's entrepreneurial activities, general revenue, Section 94 contributions and external funds in the form of Government grants. If the anticipated yields from these sources are not achieved it will result in the proposed works being delayed to later dates.

Council will encourage community assistance in the development of new facilities as well as maintenance of existing facilities through the co-operation and assistance of local groups.

4.4 Weed Control

The control of noxious weeds in general shall remain with the Illawarra Noxious Weed Authority. Council will carry out the control of nuisance weeds or environmental weeds. This will involve the use of herbicides or mechanical methods as well as minimum disturbance methods where appropriate.

4.5 Maintenance

Council will:

- Carry out maintenance and inspection as detailed in the Strategic Asset Maintenance Program for Parks and Reserves, Recreational Facilities, Foreshores, Boat Ramps, Disused Quarries and Cemeteries;
- Review maintenance service levels outlined in the Strategic Asset Maintenance Program for Parks and Reserves to ensure that facilities are maintained efficiently and within budget constraints;
- Encourage community groups to assist with maintenance;
- Ensure the efficient and conservative use of water, pesticides, herbicides and fertilisers on Council ground; and
- Carry out bush regeneration in accordance with standard accepted practices for bush regeneration.

4.6 Fees

Council applies fees for the use of Council reserves. An application must be lodged with Council prior to the event. All applicable fees must be paid prior to the hire/use of the reserve.

The fees associated with the hiring of Council reserves for major events, concerts, functions etc, are detailed in Council's Fees and Charges Schedule. Council's fee structure is reviewed on an annual basis.

4.7 Uses and Activities Requiring Council Approval

- All activities defined in Part D Section 68 of the Local Government Act 1993;
- Fetes/cultural activities;
- Exhibition/displays;
- Commercial photographic/film shoots;
- Concerts/performances;
- Large, formal gatherings; and
- Recreational and environmental facilities under the care, control or management of Council, rehabilitation of wetland systems, essential public works.

4.8 Prohibited Activities

Activities in the view of Council which may be damaging, disruptive and/or may represent a danger to either users of the reserve, neighbouring properties or the site, or which are not consistent with the 6(a) zoning.

4.9 Sale of Alcohol

Council must approve the sale of alcohol on Council property. Before approval is sought, a Functions Licence must be obtained from the NSW Police Department. This licence must be produced in every instance where an application involving the sale of alcohol on Council property is sought.

Applications must meet the requirements set down by the Licensing Board, Courts of NSW and Council.

4.10 Signage

Council uses signs to regulate the activities carried out on Community Land and to provide educational information so as to provide a safe and enjoyable place for passive and active recreational pursuits.

Whilst signs are a crucial source of information, they have a significant impact on the aesthetics of a reserve. All signs must meet a design standard and be approved by the Manager of Parks and Environment. All signs must be sympathetic to their environment in their design, construction and location.

All Council signs erected under Section 632 of the Local Government Act and as part of the Strategic Asset Management Program (SAMP), plus reserve name signs and traffic and safety signs, are permissible. Council must approve all other signs before erection.

4.11 Easements

Council reserves the right to grant easements as required for utilities and access, bearing in mind the impact of such easements on the site.

4.12 Leases, Licences and Other Estates

Council does not propose to grant any leases, licences or other estates (apart from easements as earlier noted) in respect of the community land except for those leases, licences and other estates permitted by Clause 25 of the Local Government (General) Regulation 1999.

4.13 Animals on Reserves

Existing Acts and Regulations regarding the prohibition of animals such as dogs and horses on Community Land without prior Council approval, must be enforced to keep these areas free of animals and excrement.

Dogs are not permitted in the Reserve unless they are leashed.

Council will enforce the Companion Animals Act 1998 and Regulations or equivalent which states that the owner of a dog found in a prohibited place is in breach of the law.

4.14 Public Safety

As recommended by the LOGOV Risk Management Services report, Council has developed a Strategic Asset Maintenance Program (SAMP) for all its assets. SAMP has been developed to create and maintain all assets under the care, custody, control and management of Council to a safe standard and in a safe condition. This is in fact the highest standard and condition that Council can reasonably afford in all of its circumstances and having regard to financial economic, environmental, aesthetic, social or political factors or constraints.



5.0 MANAGEMENT OBJECTIVES, ISSUES AND STRATEGIES

5.1 Management Objectives

5.1.1 Core Objectives

The core objectives are defined in Section 36 (1) of the Local Government Act 1993; these vary according to the categorisation of the land.

As the land is categorised as “Natural Area–Bushland”, the core objectives are as follows:

- (a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area;
- (b) to maintain the land, or that feature or habitat, in its natural state and setting;
- (c) to provide for the restoration and regeneration of the land;
- (d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion;
- (e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994;
- (f) to ensure the ongoing ecological 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;
- (g) to protect the aesthetic, heritage, recreational, educational and scientific values of the land;
- (h) 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;
- (i) to restore degraded bushland;
- (j) to protect existing landforms such as natural drainage lines, watercourses and foreshores;
- (k) 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
- (l) to protect bushland as a natural stabiliser of the soil surface.

Council’s corporate goals, as stated in Section 3.2, are also relevant to the management of this reserve.

5.2 Major Issues

5.2.1 *Bushland Conservation*

Work on rehabilitation and revegetation of this site commenced in the early 1980's following a report presented to Council by Ms Denise Black. At that time the site was very degraded. Part of it was agisted for horses but the majority was covered by weeds and kikuyu. A small patch of remnant rainforest existed on the scree slope immediately south of Holden Avenue. The large Fig trees were a notable feature of the site even then. Ms Black's report recommended that the reserve be replanted so as to re-establish as near as possible the rainforest vegetation that would have originally covered the site. This was supported by Council. Because of the severely degraded nature of the site - it suffered from a severe invasion of both noxious and environmental weeds with only a relatively small area covered by native vegetation - the task was daunting. In accordance with accepted practices, the report recommended staged removal of the weeds and exotic plants and replacement with fast growing colonising or primary species such as Acacias. It recommended the retention of the remnant forest behind Holden Avenue. At the eastern end of the site the report recommended the planting of a buffer zone consisting of more salt tolerant coastal species to provide protection within the reserve from the salt laden north easterly winds. Immediately behind the houses in Girrawheen Avenue, it was suggested that species should be selected so as not to interfere with sunlight and recommended that deciduous trees and lower shrubs be planted.



The work in revegetating the site and the existing Plan of Management has followed those recommendations. Only the western end of the reserve behind the houses in Reid Street and the central flood-plain are not planted. Some of the primary colonising species, especially the Acacias, reached their maturity in the early 1990's and for some time resources were over stretched in trying to control weeds, plant new areas and replace the dying primary species. However, those problems have been largely overcome. Nearly all the site has been planted and the ongoing work on the site should concentrate on replanting with permanent species and increasing diversity of the endemic species at the site.

5.2.2 Criticism of the Planting

Whilst the site is greatly appreciated by the community, a number of local residents have raised concerns with Council about the planting and management of the reserve. The issues may be summarised as follows:

- * Loss of beach and ocean views
- * Creation of a fire hazard
- * Safety
- * Loss of northerly sun especially in winter
- * Devaluation of their properties

• Loss of Beach and Ocean Views:

This issue was first raised in the pro-forma letter submitted by twenty-four residents. The residents stated that *“We came here to live by the beach. As a result of Council’s actions in the late 80’s, we now live by a small forest. As ratepayers we consider Council has a moral obligation to fix the problems it has created by restoring our area in a significant way to the character it had when Council named it Beachside. Obviously this will involve an extensive tree lopping, possibly combined with re-planting of more appropriate tree species.”*

The trees interfering with the views are mainly located in the eastern end of the site particularly adjoining and to the north of No’s 29–41 Girrawheen Avenue. The taller species consist mainly of Casuarinas and Eucalypts and were planted along the creek line to create a buffer zone between the open playing fields and the rainforest within the native garden and to establish a riparian habitat in that area. They are successfully fulfilling an important environmental role in that area.

Some of these trees have since been removed for other reasons such as safety and overshadowing. The removal of trees in this area in order to sustain the views of residents would require the removal of all the taller trees forming the canopy in this area. This would have a major adverse aesthetic and environmental impact on the reserve that cannot be justified given the core management objectives required for such an area under the Local Government Act. (See Section 5.1)

• Fire Hazard:

The fire hazard is dealt with as a specific issue in Section 5.2.2 and Council is adhering to the recommendations of the Rural Fire Service.

• Safety:

This was raised especially in regard to the trees growing at the eastern end of the site around the entrance off the Bonaira playing fields, particularly between No’s 29-41. Residents were concerned about the possibility of trees damaging adjoining properties or injuring people using this area. In response to those concerns, the trees in that area were inspected and any structurally unsound trees were removed. These were primarily Acacias, Silky Oaks and Casuarinas and some Willow Trees (exotics planted prior to the rehabilitation works commencing in the 1980’s) These were removed in September 2002. This is a legitimate concern and the health of the trees must be monitored as part of the on-going management of the reserve.

- **Loss of Northerly Sun:**

The area affected by the northerly sun includes the houses in Girrawheen Avenue. This can be divided into two sections, firstly No's 29-41 and secondly, No's 43-57.

The first section is immediately adjacent to the entry off the playing fields between the original access pathway and the rear fences of the houses. Approximately 20 trees have been removed from the area for a variety of reasons; some because they were structurally unsound, others, including the Silky Oaks and Willows, because they were unsuitable species. This has had the effect of reducing the overshadowing in this area and improving the amount of sunlight in that area. Only two houses, No's 37 and 39, are partially affected by shadowing in the early morning in July. Both these houses are built close to the rear boundary. However, none of the houses in this area are affected at midday. As part of the long-term management, it is proposed that the trees that have been removed be replaced with lower growing rainforest and understorey plants and deciduous species.

In regard to the second section, from No's 43-57, this section of vegetation of concern extends westwards into the centre of the reserve. A number of Casuarinas had been incorrectly planted in this area and some of the other primary species require to be thinned out as part of the ongoing management and development of the reserve. All the Casuarinas which have a potential to overshadow these houses have been removed and the primary species thinned out.

Any future replacement of plants in this area should take into account overshadowing of these properties. However, trees must not be removed unless they are structurally unsound or causing serious overshadowing problems to the adjoining houses.

To address possible overshadowing problems in a systematic way, the existing planting and future planting must meet the following requirements. A minimum three hours of sunlight is to be available between the hours of 9.00 am and 3.00 pm on June 22 to at least 50% of the living room windows of adjoining development. This is to be assessed as required by a shadow diagram demonstrating the impact on living room windows.

- **Devaluation of Properties:**

This is related to the issue of views. However, the work required to sustain the views from the properties would have a major impact on the reserve at the eastern entrance that would severely compromise the core management objectives for the reserve. These management objectives are specified in the Local Government Act. Even if these trees in the reserve were removed to restore the views, there could be no guarantee that view lines would not be interrupted by future planting or development on private property.

At the same time, the reserve is a very valuable asset that could be considered to add value to many of these properties.

5.2.3 *Appreciation of Planting*

Although there has been criticism of the management of the reserve, there have also been positive comments received from the community. These note the following:

- The original purpose of the development of the reserve – to protect and extend the remnant rainforest.
- The conversion from a weed infested area providing a habitat for feral animals to a “*green oasis*” enjoyed by many people.
- The site provides a home for 18 permanent bird species and 96 other species.
- It is a valuable passive recreation area used by many people for a wide range of purposes e.g. birdwatching, walking, picnicking, cycling.



5.2.4 *Planting Zones*

In order to address these concerns and also to maintain the integrity of the reserve as a Natural Bushland Reserve, as defined under the Local Government Act, it is proposed that for management purposes the reserve be divided into management units or planting zones with a specific species list for each zone. This species list would apply to all future planting in the reserve unless changed by an amendment to the Plan of Management and providing it complies with the requirements for overshadowing as set out in Section 5.2.2. The details of the zones and the planting schedule are shown in Appendix 1. The implementation of that future planting program is subject to future funding and the availability of resources.

5.2.5 *Bush Fire Management*

The site was inspected by the NSW Rural Fire Service in 2003 and the Service provided a report to Council on the management of the reserve. This followed concerns raised by some residents about the bush fire risk associated with the revegetation of the area. The report stated that “*the land is being managed in an appropriate manner*”. It noted that an Asset Protection Zone are not appropriate for this site, that a large proportion of the reserve consists of rainforest species and that removal of the surface fuel will minimise any risk of a crown fire within the reserve. It made specific recommendations about the management of surface fuel which are being adhered to.

5.2.6 *Access*

Access by public vehicles is not permitted within the reserve. Parking for vehicles is conveniently located at the eastern entrance to the garden. However, as noted in Section 2.2, pedestrian and cycle access is provided through the reserve via the sealed pathway. Most of that access is suitable for disabled persons except for the section at the western end leading up to Reid Street where the desirable grade cannot be achieved because of the terrain. This pathway provides a good link to the shared pathway through Kendalls Beach Reserve to Kiama.

5.2.7 *Commemoration of Wadi Wadi Aboriginal People*

In 1989 Council, with the co-operation and agreement of the Wadi Wadi Aboriginal, dedicated a site in the reserve to commemorate the Wadi Wadi people and their descendants living in this area. A ceremony was held on the site attended by the then Mayor, Councillor Neville Fredericks, other Councillors and Aboriginal people. A plaque fixed to a large rock at the edge of the shared pathway marks this occasion. Unfortunately, this plaque is not very noticeable and it either should be relocated or a more suitable interpretative sign erected so that visitors to the site are aware of this dedication.

5.2.8 *Closure of Kendall Street*

The closure of the unformed part of Kendall Street and formal addition to the reserve would allow this land to be legally included in this Plan of Management. However, this land is not a formed road under the Roads Act 1993 and all ownership of this land therefore lies with the Department of Lands. However, it is highly unlikely that the land will be used as a road. It is presently zoned Special Purposes (Hospital) (5a) and Residential A (2a) but it has been managed and developed as part of the Native Garden since 1982. It is appropriate that this continue and that it be managed in sympathy with the adjoining bushland in the reserve. The zoning should be altered to Existing Recreation (6a) to reflect its use.

6.0 ACTION PLAN

The following tables set out a number of actions required to implement the identified Management Strategies and Performance Targets for each Management Unit within the Bonaira Native Garden. These actions are the means of achieving the objectives of the Plan of Management as set out in the Local Government Act 1998. Unless otherwise noted, the responsibility for the implementation of these actions is with the Director of Engineering and Works.

| Management Objectives | Management Strategies Performance Targets | Actions (means of achieving targets) | Performance Evaluation (how they will be assessed) |
|---|---|--|---|
| <ul style="list-style-type: none"> • Provide for restoration and regeneration of the land. | <ul style="list-style-type: none"> • Encourage the regeneration of indigenous native plants and rehabilitation of habitat areas on the site. | <ul style="list-style-type: none"> • Carry out replanting and maintenance in accordance with the Schedules in Appendix 1. | <ul style="list-style-type: none"> • Progressive implementation of the works in the Schedules. |
| <ul style="list-style-type: none"> • To conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area. | <ul style="list-style-type: none"> • Encourage the regeneration of indigenous native plants and habitat areas on the site. • Reduce the impact of domestic animals. | <ul style="list-style-type: none"> • Carry out replanting and maintenance in accordance with the Schedules in Appendix 1. • Enforce the Companion Animals Act. | <ul style="list-style-type: none"> • Progressive implementation of the works in the Schedule. • Penalties issued for infringements. • Erection of appropriate signage. |
| <ul style="list-style-type: none"> • To maintain the land, or that feature or habitat, in its natural state and setting. | <ul style="list-style-type: none"> • Maintain and improve vegetation and habitat. • Ensure rehabilitation utilises native species endemic to the site. | <ul style="list-style-type: none"> • Carry out replanting and maintenance in accordance with the Schedules in Appendix 1 • Include a species list based on endemic species in the Schedules in Appendix 1. | <ul style="list-style-type: none"> • Progressive implementation of the works in the Schedules. • Progressive implementation of the works in the Schedules. |
| <ul style="list-style-type: none"> • To provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion. | <ul style="list-style-type: none"> • Limit vehicle access to the reserve. • Provide a sealed shared pathway for cyclists and pedestrians | <ul style="list-style-type: none"> • Provide suitable car barriers at all entry points to the site • Carry out Council Ranger patrols of the reserve. • Maintain the existing shared pathway. | <ul style="list-style-type: none"> • Authorised vehicles only in the area. • Maintain shared pathways in accordance with S.A.M.P. |

| Management Objectives | Management Strategies Performance Targets | Actions (means of achieving targets) | Performance Evaluation (how they will be assessed) |
|--|--|--|---|
| <ul style="list-style-type: none"> To assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994. | <ul style="list-style-type: none"> Work with the NPWS in the development of recovery plans. | <ul style="list-style-type: none"> Encourage the establishment of appropriate Threatened Species on the site. | <ul style="list-style-type: none"> Increase in occurrence of Threatened Species at this site. |
| <ul style="list-style-type: none"> To ensure the ongoing ecological 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. | <ul style="list-style-type: none"> Facilitate the provision of information on the general value of the site to the public. | <ul style="list-style-type: none"> Develop interpretative signage and literature about the value of the site. | <ul style="list-style-type: none"> Provision of signage and distribution of literature. |
| <ul style="list-style-type: none"> To protect the aesthetic, heritage, recreational, educational and scientific values of the land. | <ul style="list-style-type: none"> Facilitate the provision of information on the general value of the bushland area to the public. | <ul style="list-style-type: none"> Develop interpretative signage and literature about the value of the site. | <ul style="list-style-type: none"> Provision of signage and distribution of literature. |
| <ul style="list-style-type: none"> To restore degraded bushland. | <ul style="list-style-type: none"> Enhance the quality of the vegetation on the site. | <ul style="list-style-type: none"> Carrying out replanting and on-going maintenance in accordance with the Schedules in Appendix 1. | <ul style="list-style-type: none"> Progressive implementation of the works as per the Schedules in Appendix 1. |
| <ul style="list-style-type: none"> To protect existing landforms such as natural drainage lines, watercourses and foreshores. | <ul style="list-style-type: none"> Minimise erosion in the watercourse. | <ul style="list-style-type: none"> Stabilise the watercourse by rock revetment protection at critical locations and revegetation of the banks and bed of the channel with native species. | <ul style="list-style-type: none"> Control of erosion in watercourse. |

| Management Objectives | Management Strategies Performance Targets | Actions (means of achieving targets) | Performance Evaluation (how they will be assessed) |
|---|--|--|---|
| | | <ul style="list-style-type: none"> Extend the riparian vegetation as per the Schedules in Appendix 1. | <ul style="list-style-type: none"> Establishment of riparian vegetation as per the Schedules in Appendix 1. |
| <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Seek to increase the area of the community land by the formal closure of Kendall Street. | <ul style="list-style-type: none"> Manage the unformed part of Kendall Street in sympathy with the adjoining Bushland Unit. Continue to pursue the closure of Kendall Street with the Department of Lands for the purpose of adding the area to the Bonaira Reserve. | <ul style="list-style-type: none"> Progressive implementation of the works in Appendix 1. Closure of Kendall Street and addition to reserve. |
| <ul style="list-style-type: none"> To protect bushland as a natural stabiliser of the soil surface. | <ul style="list-style-type: none"> Prevent the removal of trees. Encourage the regeneration of indigenous native plants. | <ul style="list-style-type: none"> Ensure Council's Tree Preservation Order is applied to the reserve. Carry out replanting and ongoing maintenance in accordance with the Schedules in Appendix 1. | <ul style="list-style-type: none"> Minimisation of soil erosion. Carry out replanting and ongoing maintenance in accordance with the Schedules in Appendix 1. |

7.0 REFERENCES

Kiama Municipal Council Kiama Council Management Plan, 2004/2007

Kiama Municipal Council Local Environmental Plan, 1996

Department of Local Government Practice Note No1, Public Land Management, May 2000

NSW Rural Fire Service Report on Bush Fire Risk at Bonaira Native Garden, 2003

Appendix 1

BONAIRA RESERVE PLANTING ZONES

Zone 1 - Reid Street Entrance: Progressively remove over mature primary species and replant using species listed in Schedule 1.

Zone 2 - South of Hospital: Progressively remove over mature primary species and replant using species listed in Schedule 1 and Schedule 2.

Zone 3 - South Holden Place: Maintain existing vegetation. Replant when required using species listed in Schedule 2 and Schedule 3.

Zone 4 – North side of cycleway behind Allambie Crescent: Progressively remove over mature primary species and replant using species listed in Schedule 1 (80%) and Schedule 2 (20% or approximately 25 trees).

Zone 5A – Creek - both sides lower riparian zone: Maintain existing vegetation. Replant when required using species listed in Schedule 4.

Zone 5B – Creek - middle riparian zone: Link lower and upper parts of riparian zone using species listed in Schedule 4.

Zone 6 - Girrawheen Avenue boundary planting strip (15m wide from boundary fence): Maintain existing vegetation until structurally unsound. Replant when required using species listed in Schedule 1 (80%) and Schedule 5 (20% or approximately 15 trees).

Zone 7 – Between Creek and Zone 6: Maintain existing vegetation until structurally unsound. Replant when required using species listed in Schedule 1 and Schedule 2.

Zone 8 – South west corner: Maintain existing vegetation. Replant when required using species listed in Schedule 1 (80%) and Schedule 5 (20% or approximately 15 trees).

Zone 9 – Reid Street boundary: Plant using species listed in Schedule 1. *These shrubs be planted in groups varying in width from 4 to 6 metres, approximately 12 metres long and with spaces between each group of 8 metres. That a clear space of 4 metres be maintained between the edge of this planting and the fences.*

Zone 10 – Floodplain: Remove Coral trees and replace with two Figs (*Ficus obliqua* and *Ficus superba*), plant a grove of Cabbage Tree Palms (*Livistonia australis*) on floodplain (approximately 10 trees).

Zone 11 – Western slope: Plant eight specimen trees; Illawarra Flame trees (*Brachychiton acerfolium*, Red Cedar (*Toona australis*))



Schedule 1

Species List: Zones 1, 2, 4, 6, 7, 8 and 9

These species are indigenous to the Kiama Municipal Area on primarily volcanic local geological strata, in particular the Gerringong volcanics, Saddleback latite and Minnamurra latite and associated Quaternary alluvium.

Further plantings should be of species from these schedules or of any other species indigenous to the above-listed areas.

Shrubs up to 3 Metres Height

| | |
|----------------------------------|-------------------------------|
| <i>Acalypha nemorum</i> | |
| <i>Alchornea ilicifolia</i> | Native Holly |
| <i>Beyeria lasiocarpa</i> | |
| <i>Beyeria viscosa</i> | |
| <i>Bossiaea kiamensis</i> | Kiama Bossiaea |
| <i>Breynia oblongifolia</i> | Native Privet |
| <i>Cassinia aculeata</i> | Dolly bush |
| <i>Cassinia trinerva</i> | |
| <i>Citriobatus pauciflorus</i> | Native orange-thorn |
| <i>Claoxylon australe</i> | Brittlewood |
| <i>Clerodendrum tomentosum</i> | Hairy clerodendrum |
| <i>Coprosma quadrifida</i> | Prickly currant bush |
| <i>Correa alba</i> | White Correa |
| <i>Correa lawrenciana</i> | |
| <i>Croton verreauxii</i> | Croton |
| <i>Goodia lotifolia</i> | Goodia |
| <i>Helicia glabriflora</i> | |
| <i>Hymenanthera dentata</i> | Tree violet |
| <i>Indigofera australis</i> | Austral indigo |
| <i>Leptospermum morrisoni</i> | Common Tea Tree |
| <i>Leucopogon juniperinus</i> | Prickly heath |
| <i>Leucopogon lanceolatus</i> | Lance-leaved heath |
| <i>Lomandria longifolia</i> | Mattrush |
| <i>Monotoca elliptica</i> | Wallang-unda |
| <i>Myoporum boninense</i> | (prostrate and upright forms) |
| <i>Myoporum insularae</i> | Boobialla |
| <i>Nicotiana debneyi</i> | |
| <i>Notolea longifolia</i> | Native Olive |
| <i>Olearia argophylla</i> | Silver Bush |
| <i>Olearia viscidula</i> | Wallaby weed |
| <i>Omalanthus stilingifolius</i> | shrubby Bleeding Heart |
| <i>Pimelea ligustrina</i> | Privet-leaved Pimelea |
| <i>Pittosporum revolutum</i> | Hairy pittosporum |
| <i>Prostanthera incana</i> | Velvet mint bush |

Schedule 1 (Cont)

| | |
|--------------------------------|--------------------|
| <i>Prostanthera incisa</i> | Cut leaf mint bush |
| <i>Prostanthera linifolia</i> | Mint bush |
| <i>Psychotria loniceroides</i> | |
| <i>Rubus rosifolius</i> | Native raspberry |
| <i>Sambucus australasicus</i> | Native elderberry |
| <i>Santalum obtusifolium</i> | Sandalwood |
| <i>Senna acclinis</i> | |
| <i>Senna odorata</i> | |
| <i>Tasmannia insipida</i> | Pepper bush |
| <i>Telopea speciosissima</i> | Waratah |
| <i>Wilkiea huegelliana</i> | Veiny wilkiea |
| <i>Zieria granulata</i> | Warty zieria |
| <i>Zieria smithii</i> | Sandfly Zieria |

Grasses, Sedges, Lillies & Herbs

| | |
|-------------------------------------|--------------------------|
| <i>Ajuga australis</i> | Bugle |
| <i>Alocasia macrorrhizos</i> | Cunjevoi lily |
| <i>Aneleima acuminatum</i> | |
| <i>Aneleima biflorus</i> | |
| <i>Austrocynoglossum latifolium</i> | Forest Hound's Tongue |
| <i>Austrodanthonia bipartita</i> | Wallaby Grass |
| <i>Austrodanthonia longifolia</i> | Wallaby grass |
| <i>Botriochloa macra</i> | Red Leg grass |
| <i>Bracteantha bracteata</i> | Yellow everlasting daisy |
| <i>Calandrini pickeringi</i> | |
| <i>Calystegia soldanella</i> | |
| <i>Canavallia rosea</i> | Coastal Jack bean |
| <i>Carex appressa</i> | |
| <i>Carex longebrachiata</i> | |
| <i>Centella asiatica</i> | Arthritis weed |
| <i>Crinum pedunculatum</i> | Crinum lily |
| <i>Cymbopogon refractus</i> | Native lemon grass |
| <i>Desmodium varians</i> | Tick trefoil |
| <i>Dianella caerulea</i> | |
| <i>Dianella congesta</i> | |
| <i>Dianella longifolia</i> | |
| <i>Dichelachne crinita</i> | Long hair plume grass |
| <i>Dichondra repens</i> | Kidney weed |
| <i>Dodonaea viscosa</i> | Viscid hop bush |
| <i>Einadia hastata</i> | a saltbush |
| <i>Einadia nutans</i> | a saltbush |
| <i>Elatostema reticulatum</i> | Waterfall spinach |
| <i>Enchylaena tomentosa</i> | a saltbush |
| <i>Entolasia marginata</i> | a native grass |
| <i>Entolasia stricta</i> | a native grass |
| <i>Eragrostis leptostachya</i> | a native love grass |

Schedule 1 (Cont)

| | |
|----------------------------------|-----------------------|
| <i>Eragrostis parviflora</i> | Paddock love grass |
| <i>Gahnia aspera</i> | Rough saw-sedge |
| <i>Gahnia melanocarpa</i> | Black fruit saw-sedge |
| <i>Galium gaudichaudii</i> | Rough bedstraw |
| <i>Gymnostachys anceps</i> | Settlers' flax |
| <i>Hardenbergia violacea</i> | Purple twining pea |
| <i>Hibbertia scandens</i> | Golden guinea flower |
| <i>Irenepharsus triphorus</i> | Irenepharsus |
| <i>Isolepis nodosa</i> | Knobby club rush |
| <i>Juncus usitatus</i> | Juncus |
| <i>Kennedia rubicunda</i> | Running postman |
| <i>Lepidosperma laterale</i> | Lepidosperma Sedge |
| <i>Lobelia alata</i> | Winged Lobelia |
| <i>Microlaena stipoides</i> | Weeping Grass |
| <i>Ozothamnus argophyllus</i> | White paper daisy |
| <i>Pelargonium australe</i> | Native Pelargonium |
| <i>Plectranthus parviflorus</i> | Cockspur flower |
| <i>Plectranthus graveolens</i> | Rock cockspur flower |
| <i>Poa labillardieri</i> | Poa |
| <i>Poa poiformis</i> | Poa |
| <i>Poa sieberana</i> | Poa |
| <i>Pseuderanthemum variabile</i> | Pastel flower |
| <i>Rhagodia candolleana</i> | Coastal saltbush |
| <i>Scaevola calendulacea</i> | Dune fan flower |
| <i>Scaevola aemula</i> | Fairy fan flower |
| <i>Senecio bipinnatisectus</i> | |
| <i>Senecio lautus</i> | |
| <i>Stellaria flaccida</i> | |
| <i>Urtica incisa</i> | |
| <i>Viola betonicifolia</i> | |
| <i>Viola hederacea</i> | |

Schedule 2

Small–Medim Trees (3-9m)

| | |
|------------------------------------|------------------------|
| <i>Acmena smithii</i> | Lily pilly |
| <i>Actephila lindleyi</i> | |
| <i>Alectryon subcinereus</i> | Native quince |
| <i>Alectryon subcinereus</i> | Native quince) |
| <i>Allocasuarina verticillata</i> | Drooping she-oak |
| <i>Alphitonia excelsa</i> | Red ash |
| <i>Austromyrtus acmenoides</i> | |
| <i>Baloghia inophylla</i> | Brush bloodwood |
| <i>Banksia integrifolia</i> | Coast Banksia |
| <i>Bedfordia arborescens</i> | Blanket bush |
| <i>Brachychiton acerifolius</i> | Flame tree |
| <i>Canthium coprosmoides</i> | Coast canthium |
| <i>Cassine australe</i> | Red-fruited olive plum |
| <i>Clerodendrum tomentosum</i> | Native clerodendrum |
| <i>Croton verreauxii</i> | Native carscarilla |
| <i>Daphnandra</i> sp. | Illawarra socketwood |
| <i>Diospyros australis</i> | Black plum |
| <i>Duboisia myoporoides</i> | Corkwood |
| <i>Ehretia acuminata</i> | Koda |
| <i>Elaeodendron australe</i> | Olive Plum |
| <i>Eupomatia laurina</i> | Bolwarra |
| <i>Euroschinus falcata</i> | Blush cudgerie |
| <i>Geijera salicifolia</i> | Brush wilga |
| <i>Glochidion ferdinandi</i> | Cheese tree |
| <i>Guioa semiglauca</i> | Guioa |
| <i>Leptospermum morrisoni</i> | Saddleback tea tree |
| <i>Melaleuca armillaris</i> | Bracelet honey myrtle |
| <i>Melia azederach</i> | White cedar |
| <i>Melicope micrococca</i> | White euodia |
| <i>Myoporum acuminatum</i> | Northern boobialla |
| <i>Notelaea venosa</i> | Native olive |
| <i>Omalanthus nutans</i> | Native bleeding heart |
| <i>Pararchicodendron pruinosum</i> | Snow wood |
| <i>Planchonella australis</i> | Black apple |
| <i>Polyscias elegans</i> | |
| <i>Polyscias elegans</i> | Celery wood |
| <i>Prostanthera lasianthos</i> | White mint bush |
| <i>Rapanea howittiana</i> | Howitt's muttonwood |
| <i>Rapanea variabilis</i> | Muttonwood |
| <i>Rhodamnia rubescens</i> | Ironwood |
| <i>Sarcomelicope simplicifolia</i> | Yellow wood |
| <i>Scolopia braunii</i> | Flintwood |
| <i>Streblus brunonianus</i> | Whalebone Tree |
| <i>Stenocarpus salignus</i> | Scrub Beefwood |
| <i>Streblus brunonianus</i> | Whalebone |
| <i>Synoum glandulosum</i> | Scentless Rosewood |
| <i>Syzygium paniculatum</i> | Brush Cherry |

Schedule 3

Species List: Zone 3

Tall Trees 10-30m

| | |
|-------------------------|----------------------|
| Toona australis | Red Cedar |
| Guioa semiglacua | |
| Acmena smithii | Lillypilly |
| Brachychiton acerfolium | Illawarra Flame Tree |
| Stenocarpus salignius | Scrub Beefwood |
| Citronella moorei | Churnwood |
| Pennantia cunninghamii | Brown Beech |
| Diploglottis australis | Native Tamarind |
| Ficus obliqua | Small Leaf Fig |
| Ficus superba | Deciduous Fig |
| Ficus macrophylla | Moreton Bay Fig |
| Livistonia australis | Cabbage Tree Palm |

Schedule 4

Species List: Zones 5A and 5B

Riparian Vegetation

| | | |
|--------------------------------------|--------------------|-----------------------------------|
| <i>Alisma plantago-aquatica</i> | Water plantain | Aquatic herb |
| <i>Aneleima acuminatum</i> | Pointed Aneleima | Herb |
| <i>Aneleima biflorum</i> | Aneleima | Herb |
| <i>Baloghia lucida</i> | Brush Bloodwood) | Medium tree |
| <i>Casuarina glauca</i> | Swamp Oak | Tall tree |
| <i>Citronella moorei</i> | Churnwood | Tall tree |
| <i>Clerodendrum</i> | Hairy clerodendrum | Small-medium shrub |
| <i>Croton verrauxii</i> | Croton | Medium shrub |
| <i>Cyathea australis</i> | Rough Tree Fern | |
| <i>Cyathea cooperi</i> | Tree Fern | |
| <i>Dicksonia antarctica</i> | Soft Tree Fern | |
| <i>Deeringia amaranthoides</i> | Perennial herb | Rare |
| <i>Doodia aspera</i> | Rasp Fern | Spreading fern |
| <i>Elaeodendron australae</i> | Olive Plum | small-medium tree |
| <i>Guioa semiglacua</i> | | Tall tree |
| <i>Gymnostachys anceps</i> | Settler's flax | Sedge-like |
| <i>Isachne globosa</i> | Swamp millet | Groundcover, swampy areas |
| <i>Juncus usitatus</i> | Rush | Clumping |
| <i>Livistonia australis</i> | Cabbage Tree Palm | Tall tree |
| <i>Lomandra longifolia</i> | Mat rush | Clumping |
| <i>Microlaena stipoides</i> | Weeping grass | Grass |
| <i>Oplismenus aemulus/ imbecilis</i> | Mat grasses | Grass |
| <i>Peperomia leptostachya</i> | Peperomia | Succulent herb |
| <i>Poa labillardieri</i> | Poa grass | Clumps |
| <i>Polia crispata</i> | Polia | Herb, spreading, rooting at nodes |
| <i>Syzygium paniculatum</i> | Brush Cherry | Medium tree |

Schedule 5

Species List: Zones 6 and 8

Deciduous Tall Trees (10-20m)

| | |
|-------------------------|----------------------|
| Toona australis | Red Cedar |
| Brachychiton acerfolium | Illawarra Flame Tree |
| Melia azedarch | White cedar |
| Ehretia acuminata | Koda |