

# Plan of

Management

## Sanctuary Place Quarry Minnamurra Headland



Prepared by  
Kiama Municipal  
Council

Adopted 19 Dec 2000



<p style="text-align: center;"><b>SANCTUARY PLACE QUARRY</b> <b>PLAN OF MANAGEMENT</b> <b>Adopted by Council on 19 December 2000</b></p>
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## **1.0 INTRODUCTION**

### **1.1 Background**

The Sanctuary Place Quarry is a disused hard rock quarry located on the Minnamurra Headland area near the mouth of the Minnamurra River.

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*.

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.

This plan of management 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 identifies appropriate outcomes for the quarry and provides a way for achieving these outcomes through a series of clear strategies and detailed actions.

### **1.2 Community Land Covered by this Plan**

The community land covered by this plan is shown on Council Plan No. 1493 and is part of Lot 1 DP593079. The land is zoned as Open Space Existing Recreation 6(a) under the Kiama Council's Local Environmental Plan 1996. The area covered by this plan covers approximately 2.7 hectares.

The quarry is surrounded on the southern and western sides by housing zoned Residential 2(a) and to the north and east by the Minnamurra Headland Reserve zoned 6(a) Recreation.

### **1.3 Category and Class of Land**

As noted earlier, all the land included in this plan is classified as *community land* under the *Local Government Amendment Act 1998*.

Under Sec. 36(4) of the *Local Government Act 1998*, all community land must be categorised as one following categories; (natural area, sportsground park, area of cultural significance, or general community use). In accordance with the guidelines set out in the *Local Government (General) Regulation 1999*, the quarry is categorised for general community use.

## **1.4 Function and Value**

The Sanctuary Place Quarry has not functioned as a quarry since the 1950's. For safety reasons it is currently fenced off to prevent unauthorised entry. No public access is permitted. However it does provide scenic values to adjoining residential properties and has potential as a local recreational resource.

Although currently in a highly degraded state the quarry does provide limited habitat for wildlife. The value of this habitat could be significantly enhanced by careful attention to landscape treatment and wetland areas.

The quarry also has historical values resulting from its former role as a hard rock quarry. These values are also shared by a number of other similar quarries around the Kiama district.

## **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.
- Hold the formal public consultation process. (Note that in this plan significant public and community input has been received during the preparation phase.)
  - 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 and the findings of the public hearing. Council may decide to amend the draft plan or to adopt the plan without amendment.
- Should the draft plan require 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**

Council has recognised the value of an effective consultative process for the quarry and has established a number of mechanisms to identify community needs.

A Sanctuary Place Quarry Working Group was established by Council to assist in providing community input into the preparation of the draft plan. However it should be noted that the Working Group's role was not to determine the final detail of the draft plan.

This group was first formed in March 1999. The group initially consisted of four Councillors and five members of the community which were appointed after responding to a public advertisement. Following representation from a number of residents living adjacent to the quarry, Council appointed a further four persons from the local community. The Working Group held regular meetings until March 2000.

To establish the wider community input into the plan Council developed and distributed a survey to residents of Minnamurra and Kiama Downs in regard to future improvements to the old quarry. The Council also held an information night in August 1999 to outline to interested members of the public the process involved in establishing the plan, the role of the Working Group and progress to date. The Council has also encouraged written submissions on the future use of the quarry and all of the individual submissions and petitions have been received and evaluated.

## **1.7 Physical Features**

The old quarry has a roughly rectangular shape with the short side about 150 metres long and the edge, which runs in an east/west direction, is about 300 metres long. It covers an area of about 2.7 hectares. The quarry floor ranges in elevation from 12-24 metres above sea level. The worked stone walls of the quarry are strongly fractured and do not exhibit clean cut faces. They range in height from about 28 metres in the floor of the quarry to 8-16 metres at the substantial raised bench area in the south-eastern corner.

Vehicular access for maintenance is possible to the upper bench via a public pathway from Sanctuary Place and to the floor of the quarry from Ritchie Place. The latter entrance road utilises a ramp remaining from the earlier quarrying activities.

The quarry is in a highly degraded state. Part of the floor of the quarry is covered with imported clean fill that was spoil from substantial sewer main construction works in the late 1980's. The quarry walls have been left in the condition they remained at the end of the quarrying process. No attempt has been made to stabilise the rock faces and some sections may be unstable. Any future remedial work would be subject to detailed geotechnical investigation. Stormwater drainage in the quarry occurs generally from east to west via informal depressions in the floor of the quarry culminating in an outlet in the north western corner of the area.

The quarry and its edges are heavily infested with noxious and environmental weeds. There are large areas of Blackberry *Rubus fruticosus* and Lantana *Lantana camara*. The latter scrambles up some of the sides of the quarry and cascades from the upper edges.

There are number of Coral trees *Erythrina x sykesii* in the floor of the quarry. Kikuyu Grass *Pennisetum clandestinum* has covered the dumped spoil heaps. There is also evidence of a number of other significant weed species such as Bitou Bush *Chrysanthemoides monlifera*, Prickly Pear *Opuntia sp.*, and Inkweed.

Some native species have colonised sections of the quarry. There is a large stand of Swamp Oak *Casuarina glauca* in the western end of the quarry. There are also groves of Wattles *Acacia* sp. in the floor area. There are significant intermittent wet areas along the drainage lines at the bottoms of the cliff faces that have been colonised by various plant species and in particular Cumbungi *Typha* sp. These areas have the potential for enhancement as a wetland feature.

The land contains no structures or buildings.



View from eastern rim of Quarry looking west towards Ritchie Place



## **2.0 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.

### **2.1 Aim of this Plan of Management**

To develop a Plan of Management for the quarry site 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.

### **2.2 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.

## **3.0 COUNCIL POLICIES**

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

### **3.1 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 aims 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.

### **3.2 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 enquiries and complaints from the public can be efficiently and promptly dealt with.

### **3.3 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.

### 3.4 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.



This site is heavily infested with noxious & environmental weeds

### 3.5 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* annually, 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

### **3.6 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.

### **3.7 Uses and Activities**

#### ***3.7.1 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.

#### ***3.7.2 Prohibited Activities***

Activities in the view of Council 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.

### **3.8 Sale of Alcohol**

- The sale of alcohol on Council property must be approved by Council. 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.

### **3.9 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 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, traffic and safety signs, are permissible. All other signs must be approved by Council before erection.

### **3.10 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.

### **3.11 Leases, Licenses and Other Estates**

- (a) Council may grant a lease, licence or other estate in respect of community land in accordance with Section 46 of the *Local Government Act* as follows:
- (b) for the provision of public utilities and works associated with or ancillary to public utilities, or
- (c) in accordance with an express authorisation in the plan of management and such provisions of the plan of management as apply to the granting of the lease, licence or other estates:
  - (i) for the purpose prescribed by subsection (4) of Section 46, or for the purpose prescribed by any of sections 36E to 36N as a core objective of the categorisation of the land concerned, or
  - (ii) for a short-term, casual purpose prescribed by the regulations, or
  - (iii) for a residential purpose in relation to housing owned by the Council, or
  - (iv) for the purpose of providing pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the Council or other public utility provider that is situated on the community land.

Having regard to the above Council will only grant a lease, licence or other estate in respect of community land if the purpose for which it is granted is consistent with the core objectives, for the subject land as contained in the plan of management or as prescribed in the *Local Government Act 1993* as amended

A lease or licence or other estate will not be granted for a period (including any period of option) exceeding twenty one (21) years.

The granting of leases, licences and other estates will be made in accordance with Section 47 & 47A of the *Local Government Act 1993* as amended. Subleasing or sub letting must be in accordance with Section 47C of the *Local Government Act 1993* as amended.

## **4.0 MANAGEMENT OBJECTIVES, ISSUES AND STRATEGIES**

### **4.1 Management Objectives**

The core objectives of this Plan of Management are defined in Section 36 (1) of the Local Government Act 1993.

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).

Council's corporate goals, which are set out under Section 2.2 of this document, are also key management objectives that must be addressed under the Plan of Management.

### **4.2 Management Issues**

The following major issues that require management action and detailed consideration have been identified through consultation with the community, the Working Group, Council staff and from specialist studies and reports.

Management strategies have also been developed to address the implications of the various management issues, taking into account Council policy, legislative requirements and community inputs.

### **4.3 Recreational Opportunities**

Council's broad planning policies of balancing the provision of active and passive recreational facilities while addressing the impact of such development on local residents are highly relevant to this plan.

The quarry site provides the potential for both passive and active recreational opportunities. Council requested an investigation be undertaken to assess suitable sites in the Minnamurra area for a multipurpose hardstanding area. No other suitable site for this purpose was found in the Minnamurra area.

The quarry could provide a venue for local youth in particular to engage in sports such as basketball and netball and informal activities such as skateboarding and informal ball games. Passive activities suitable for a redeveloped quarry floor could include walking, picnicking, bird watching and informal games such as social cricket and other ball games.

The Working Group debated the issue of striking this balance between active and passive uses at length. Individual written submissions from the local community tended to support passive only use of the area while the letterbox survey which covered a wider catchment of the community indicated that people were more likely to support both types of uses with a slight preference towards passive activities.

The majority of the Working Group agreed to support the active area including the hardstanding component. The Working Group made several key recommendations:

- *"That in the light of public opinion expressed and submissions received, the Group support a passive recreational theme for the quarry. That whilst the dominant theme for the use of the quarry is to be passive recreation, the Working Group will consider acceptable active recreation facilities in designated areas in the quarry. "*
- *"That, if required, a hard standing area be provided in the south western corner of the floor of the quarry in the area below the access ramp and that the facility be screened with suitable landscaping in conjunction with the additional carparking."*

*Management Strategies:*

- The redevelopment should provide the maximum level of amenity, flexibility and recreational opportunities consistent with other constraints such as environmental issues.
- Provide a balance between passive and active recreational uses with a strong emphasis on passive uses and activities.
- Confine active uses to a single area within the quarry to reduce potential conflicts.

#### **4.4 Social Issues – Access and Equity**

There has been a significant amount of discussion within the Working Group and representations made from the community concerning the social impacts of the development of the Sanctuary Place Quarry. In particular there are concerns that the provision of active recreational facilities for young people will lead to undesirable and intolerable behaviour and noise which would impact on the amenity of surrounding residential properties. This concern was reinforced through a community petition.

Representations and a petition presented by a local youth worker from the North Kiama Neighbourhood Centre stressed the lack of facilities for use in the area and called for one part of the public space in the quarry to be developed *"as a safe environment in which young people can participate in casual spotting activities"*.

There is a significant lack of informal active recreational opportunities for youth in the Minnamurra area.

The importance of making adequate provision for equity and access and in particular for the provision of facilities for youth both at the local and statewide levels of government must be recognised.

Kiama Council in its Management Plan has as one of its Corporate Goals "To promote the principles of access, equity and social justice in the development of Council's Services".

Council also has an obligation to consider access and equity issues in the preparation of its Social/Community Plan under the Local Government (General) Amendment (Community and Social Plans) Regulations 1998

In this regard, Council is responsible for making sure that their facilities and services are appropriate for, and accessible to everyone in its community (including young people who are identified as a target group).

The NSW Government in support of an equitable provision of youth facilities developed the urban Design Guidelines with Youth People in Mind (Department of urban Affairs and Planning 1999).

These guidelines state that young people have needs in public spaces which are similar to other community members and that they would prefer to share space with other people rather than be isolated from them.

The NSW Police Service has also advised Council that it supports Government Policy with respect to the use of public space by all and the right to congregate or meet for lawful purposes. They further advised that it should be borne in mind, however, that young people will congregate in many different areas and the lack of recreation facilities could give rise to even more problems.

The Federal Government's National Crime Strategy emphasises the need for the adequate provision of recreational facilities for young people.

The Kiama Council's Director of Community Services has indicated that:

*"Council's Youth Services and Programs have developed several strategies aiming at addressing the social, health, educational and recreational needs of young people. Specific activities and facilities have been developed or planned to meet expressed and identified priority needs.*

*The Plan of Management for the Sanctuary Place Quarry although it does not require specific facilities for young people should incorporate general purpose passive and active recreation facilities which can be used and available for and by young people."*

*Management Strategies:*

- To maximise recreational opportunities for all members of the community.
- To provide recreational opportunities in accordance with Council's corporate goals and legislative responsibilities.

#### **4.5 Provision of Amenities**

Any future recreational use of the quarry will require the provision of public toilets to satisfy environmental and public health requirements. Because of the levels of the quarry floor and bench and the impermeable rock base, a composting type toilet system is suggested. The toilet structures would be designed and sited to minimise visual impact from within the quarry and from vantage points around the upper edges.



Any requirements involving other buildings apart from possible shade structures are unlikely and will depend on the final active recreational uses recommended. Any proposed structures would be subject to development consent.

#### *Management Strategies*

- Any structures proposed for the quarry should be limited in type to toilets, picnic and shade facilities, signage, boardwalks and stairs.
- All structures should be designed and sited to minimise visual impacts from within the quarry and particularly from viewpoints at the top edges of the quarry. Structures should be "low key" and subdued in terms of materials and colours.

#### **4.6 Safety**

The quarry in its present state presents two fundamental safety problems -one arising from the height of the sheer quarry walls and the other from the instability of the walls. The walls vary in height from approximately 8 metres to 28 metres. The quarry is not accessible to the public and warning signs are erected around the top of the quarry in accordance with Council's Strategic Asset Management Program Policy.

There are a number of associated issues that have been recognised by the Working Group and Council. These issues include:

- material becoming dislodged and falling into the floor of the quarry,
- material being thrown into the quarry,
- people falling from the top,
- the possibility of the cliffs being used illegally for climbing, abseiling and for other adventure activities,
- and other existing potential hazards such as the uneven terrain of the quarry floor and distribution of boulders.

Any future development would need to adequately address these issues and would be subject to a risk management analysis and assessment. A geotechnical assessment will need to be undertaken to determine the condition of the quarry faces and the type of appropriate remedial and preventative action such as stabilisation of the cliff faces, fencing and other protective works.

This quarry is geologically the same as the other disused quarries in the Kiama Municipality that have been assessed by geotechnical consultants and recommendations made to reduce the risk to the users of these quarries. It would be reasonable to expect that similar recommendations would be made regarding this quarry.

Any future development proposal could possibly address these safety problems by reducing access to the base of the quarry walls enhancing the present drainage lines and establishing a continuous wetland buffer area around the base of the quarry walls.

*Management Strategies:*

- Conduct a geotechnical assessment and implement its recommendations where feasible.
- Implement the requirements of Council's Strategic Asset Management Program Policy.
- Provide adequate safety fences and barriers, and possibly utilise wetland areas as buffer zones to prevent people entering the danger zone at the bases of the cliff edges.



Northern quarry wall with upper bench in foreground

## **4.7 Environmental Impacts**

### **4.7.1 Threatened Species**

The *Threatened Species Conservation Act 1995* aims to prevent native species in NSW from becoming extinct and to secure their recovery in nature. The Local Government Act was amended from January 1999 to integrate the management of community land with the Threatened Species laws, in particular implications in the preparation of plans of management.

In relation to the Sanctuary Place Quarry a species of frog, the Green and Golden Bell Frog *Litoria aurea* that is listed as endangered under the Threatened Species Act, had been reported in or adjacent to the site. Accordingly, Council commissioned and received a technical report by *Gaia Research Pty Ltd* (Mr G Daly). The report provided the results of a survey for the presence of this frog, assessed the impact of the proposed development in the quarry on the animal, and provided a strategy for the rehabilitation of the site that could cater for Bell Frogs. This report was also undertaken in accordance with advice from the Threatened Species Unit of the NSW National Parks and Wildlife Service.

No Bell Frogs were found or heard during the survey although two species of frog, the striped Marsh Frog *Limnodynastes peronii* and the Common Eastern Froglet *Crinia signifera* were detected. These two species are not threatened under the terms of the Act.

The study found that the proposed development did not pose a significant threat to the Green and Golden Bell Frog, if it were present, or its habitat. The quarry site was not declared critical habitat and therefore would not be affected by a recovery plan or threat abatement plan for the species.

The study's recommendations in regard to the proactive management of potential future habitat in the quarry to favour the Bell Frog include:

Liase with Minnamurra Golf Club in regard to the management of their ponds. Encourage the club to eradicate the Plague Minnow (*Gambusia holbrooki*)

- Modify the terrain in order to retain water within the Quarry.
- Make provision to be able to drain the ponds within the quarry using the existing outlet pipe, in order to remove potential predatory fish and other undesirable fauna that would compete with the Bell Frog.
- Control foxes.
- Liase with adjoining residents to control cats and dogs and to prevent dumping of waste on the site.
- Restrict the timing of the use of chemicals such as glyphosphate.
- Develop a monitoring program for Bell Frogs on the site.
- Liase with Minnamurra Golf Club in regard to the management of their ponds. Encourage the club to eradicate the Plague Minnow (*Gambusia holbrooki*).

#### **4.7.2 Flora and Fauna**

As a highly modified site there are few species of native flora present. The most significant in terms of numbers and visual impact is the Swamp Oak community and a scattering of Wattles.

Nevertheless the existing aquatic vegetation (the Cumbungi) and piles of loose rock and screen provide habitat for frogs and reptiles. There is an opportunity to undertake works to enhance these habitat conditions. These works would include the improvement in water retention and physical characteristics of the wet areas and the planting of locally occurring native plant species.

As noted previously, Daly's survey detected 2 species of frog, 2 species of reptile (the Eastern Water Skink *Eulamprus quoyii* and Black Snake *Pseudechis porphyriacus*) and 8 bird species at the site. The only mammal seen was a fox. Anecdotally 30-40 species of birds have been recorded surrounding or in the quarry.

Domestic cats and dogs from the surrounding residential areas as well as the fox could be expected to have an impact on native species in the quarry.



*Casuarina glauca and Cumbungi*

#### **4.7.3 Weeds**

The site is highly degraded by weed species and is surrounded by urban development.

Major noxious weed species present in the quarry are Blackberry and Bitou Bush. There are a large number of environmental weeds present with the most prominent being Lantana, Coral Trees and Kikuyu Grass. Noxious and environmental weeds should be removed and the rampant exotic grass growth on the spoil heaps controlled.

#### **4.7.4 Noise**

The Working Group and some local residents were concerned at the possible impact of noise generated by vehicles and by people undertaking active recreational activities in the quarry. There was a perception that noise would be reflected from quarry walls towards the nearby houses.

Following the recommendation of the Working Group Council commissioned Acoustic Consultants, Wilkinson Murray Pty Ltd to undertake a noise impact assessment of the development of the quarry as a recreational area. The study examined the likely noise impact of both active and passive recreational use. It also looked at two options for the location of a possible multi-purpose active recreational facility in the quarry. The two site options examined for the hard standing area were the floor of the quarry and the raised bench at the eastern end. It also examined the noise impact of vehicular movement within the quarry.

The study concluded that the bench site for active uses was clearly superior. Noises associated with active uses (basketball, netball, skateboard-riding etc) would comply with conservative noise criteria at the residences in this location but the criterion would be marginally exceeded at the quarry floor site. It also indicated that noise from the carparks was likely to slightly exceed the conservative noise criterion, however the occasional and intermittent nature of the noise would not pose a significant problem.

The possible incorporation of speed limiting devices and carparking areas that are physically broken up by landscape treatment and earth mounding will limit vehicle speeds and opportunities for anti social behaviour, and hence would further reduce any potential noise problem.

As stated above, the acoustic study indicated a preference for the location of the active recreation area on the upper bench on the eastern side of the site maximising the distance from residential areas. Dense edge planting and other landscape treatment will also further reduce noise from the area.

#### **4.7.5 Water Quality**

The site receives some localised runoff from adjoining residential properties. The water tends to run across the site in an east/west direction in natural depressions in the bench and floor of the quarry. These depressions have become colonised by various reed type species which act as a natural filtration and nutrient uptake system. The existing ponds and depressions lack areas of free water during periods of low rainfall which reduces breeding opportunities for frogs.

Impacts on water quality from the proposed development will predominantly come from runoff from hard standing areas such as roads and carparks. This runoff can easily be directed to enhanced wetland and grassed areas to provide a negligible impact. There is an opportunity to enlarge and enhance the existing wetland areas to provide physical and environmental buffers between recreational areas and the cliff edges of the quarry.

#### *Management Strategies – Environmental Issues*

Management strategies in regard to environmental issues adopted will aim to enhance the ecological values of the site and reduce potential impacts of the development.

- Control all noxious and environmental weeds.
- Provide mass planting as part of the total landscaping of the site to enhance the extent and variety of native plant species to provide a variety of habitats for native bird and animal species.
- Make special provision for the improvement of habitat to encourage the colonisation of the site by the Bell Frog.
- Set up liaison and educational programs with surrounding residents to better manage cats and encourage the appropriate disposal of garden waste.
- Develop an interpretation/signage system to inform people of the environmental improvements and systems in the redeveloped quarry.
- Take into account the findings of the acoustic report in the planning of the site.

## 4.8 Pedestrian and Vehicular Access

Although the quarry is closed to the public, vehicular access to the floor can be currently obtained from Ritchie Place via a maintenance road that follows a ramp to the bottom of the quarry. Vehicular access is only available to the higher bench from Sanctuary Place through a 4 metre wide laneway. This access is not considered a feasible alternative for public vehicle access in the longer term. There is an existing parking area that services recreational uses of the Headland that is accessed from Eureka Avenue.

There is a need to make the quarry as accessible as possible to all. Access should be easy and convenient, with particular attention paid to the needs of disabled people. It is essential that vehicular access be obtained to both the floor and the upper bench areas. Provision of access roads to these areas would also provide for the needs of the disabled. A separate dedicated pedestrian access ramp to the upper bench to serve the needs of the disabled is not practical due to the grade limitations that would need to be applied.

A new access could be obtained to the higher bench via the existing vehicle access to the Headland from Eureka Avenue. A small carparking area is suggested on the western end of the upper bench to provide access for disabled persons to this area.

The existing maintenance access road from Ritchie Place could be upgraded and linked to a small parking area at the south-eastern corner of the floor of the quarry to provide access for the picnic areas and other passive recreational activities.

The provision of two separate parking areas is considered desirable, as it would enable users to gain easy access to the proposed facilities and to reduce the concentration of traffic on either of the streets linking the quarry.

The Working Group was divided in their views on the nature of access and the location of the carparks. The Group recommended that provision be made for a carpark adjacent to the gates off Ritchie Place with an additional facility in the quarry if required in the future. They also recommended a carpark adjacent to the access road at Eureka Avenue. Both these options are not considered feasible; the former would be highly visible on the Headland and the latter fails to provide easy and convenient access for disabled persons.

The Working Group was also concerned about people using the access roads and carparks for speeding and other illegal vehicle linked activities. Design of the works will prevent these activities through various traffic calming devices and the detailed design of the carparks. Also there is a possibility that the quarry could be locked at night if Council perceived that there was a legitimate need.

There are good pedestrian links to the Headland and the surrounding area via the coastal walking track and cycleway which passes the north and eastern rim of the planning area.

Pedestrian access to the quarry would be available from two vehicle entry points. At the present time it is not possible to gain access to the two levels without leaving the site. A steel staircase is could be provided to link the two benches to provide a safe and direct connection for able-bodied persons. Because of the height it is not feasible to provide for disabled access in this location.

A series of boardwalks may be appropriate for the floor of the quarry to traverse the wet areas and to control access to the natural areas. Viewing areas could also be located at the top of the quarry in key locations subject to geotechnical investigations.

#### *Management Strategies*

- Ensure safe and convenient access to both levels of the quarry for all sections of the community and particularly for disabled persons.
- Provide separate pedestrian and vehicular access and parking to both levels of the quarry.
- Provide a pedestrian link between both levels of the quarry.
- Prevent vehicle access during night time.

#### **4.9 History**

The Sanctuary Place Quarry was developed as a hard rock quarry, and is believed to have commenced operations around 1880. The quarry was served by a spur line off the main South Coast railway line that entered the quarry through a cutting near what is now Robinson Avenue. It was closed down and the perimeter fenced in the 1950's. The quarry material consists of a Bombo latite, a basalt type volcanic rock which is a feature of headlands in the Kiama area. It was predominantly used as a blue metal type material for road making.

Quarrying and exporting blue metal was one of the earliest industries carried out in the Kiama area and instrumental in the economic development of the town. By the 1880's at least nine blue metal quarries were being worked in Kiama and the principal activity at the harbour was the export of blue metal.

The Working Group recommended that an appropriate interpretative signage program be established in the quarry to tell the story of the operations. A memorial for the workers of the quarry and those that died in 1912 was also suggested. (it is reported that five men were killed as a result of a blasting accident in the quarry in 1912) The Kiama Historical Society also supported the interpretative program.

#### *Management Strategies*

- In conjunction with the Kiama Historical Society establish a signage based interpretative program in the quarry which could include a memorial to Quarrymen and those who died during its operations.

#### **4.10 Landscape Treatment**

The type of landscape concept to be used in the redevelopment of the quarry was the subject of considerable discussion by the Working Group and submissions from the public. The Working Group supported the idea of rainforest/wetlands on the floor of the quarry together with the provision of a grassed open area. A number of botanic type gardens were suggested with various design themes.

In developing a landscape concept for the quarry Council must take into account a number of practical as well as ecological considerations. A simple low maintenance approach is appropriate, as maintenance funds are limited. Plant species should be selected on their ability to thrive with minimum intervention. On this basis locally occurring native species would be generally the most suitable and would also enhance native wildlife habitat potential. Landscape treatment would also need to be planned to provide shade, visual screening (where needed) and a high quality' natural visual effect.

##### *Management Strategies*

- Provide a landscape treatment that will enhance fauna habitat, minimise maintenance requirements and provide shade and amenity for recreational users.
- Generally utilise locally occurring native species.



## **5.0 ACTION PLAN**

Management strategies relevant to the issues identified in this plan of management have been developed and are set out in the Action Plan. These actions will be developed and reviewed annually.

Because of the long-term nature of the aims, objectives and the issues set out in the plan these will need to be reviewed less frequently, approximately every five years.

A Master Plan drawing has been prepared to illustrate and support the management strategies and actions of this plan. The Master Plan forms a key part of this Plan of Management. Detailed design would be based on the design and planning framework provided by the Master Plan.

## 6.0 REFERENCES

### References

Wilkinson Murray Pty Ltd (2000)

Sanctuary Place Quarry, Noise Assessment of Proposed Development - Prepared for Kiama Council.

Gaia Research Pty Ltd (2000)

Target Survey for Green and Golden Bell Frog Sanctuary Place Quarry, Minnamurra, Kiama – Prepared for Kiama Municipal Council.

ISSUE	ACTION	RESPONSIBILITY	PERFORMANCE EVALUATION
<ul style="list-style-type: none"> <li>Recreational Opportunities &amp; Social Issues</li> </ul>	<ul style="list-style-type: none"> <li>Provide a range of passive and active recreational facilities as shown on the Master Plan</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Progressive completion of recreational activities</li> </ul>
<ul style="list-style-type: none"> <li>Amenities</li> </ul>	<ul style="list-style-type: none"> <li>Provide composting toilets to both levels with disabled access.</li> <li>Provide a limited number of picnic shelters and seats.</li> <li>Provide viewing areas around the rim of the quarry subject to geotechnical advice.</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Construction of toilets and other facilities and structures</li> </ul>
<ul style="list-style-type: none"> <li>Safety</li> </ul>	<ul style="list-style-type: none"> <li>Undertake a geotechnical assessment of the quarry and implement its recommendations.</li> <li>Implement the requirements of Council's Strategic Asset Management Program Policy.</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Provision of geotechnical report.</li> <li>Implementation of the recommendations of the report.</li> <li>Compliance with Policy.</li> </ul>
<ul style="list-style-type: none"> <li>Threatened Species</li> </ul>	<ul style="list-style-type: none"> <li>Carry out detailed recommendations of Daley's report to enhance the habitat of the Green and Gold Bell Frog (refer 4.7.1 of this plan).</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Progressive implementation of habitat improvement.</li> <li>The confirmation of the existence of a population of Green and Gold Bell Frogs in the quarry.</li> </ul>
<ul style="list-style-type: none"> <li>Flora and Fauna</li> </ul>	<ul style="list-style-type: none"> <li>Establish interpretative signage system to explain the ecological details of the quarry and remedial works undertaken.</li> <li>Control illegal dumping of garden prunings along side and into the area.</li> <li>Improve the water retention and physical characteristics of the wetland areas.</li> <li>Plant a variety of native species to improve habitat for native fauna.</li> <li>Develop a rainforest community in the floor of the quarry.</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Progressive revegetation of the site with native plant species.</li> <li>Observation of increased numbers of species of native fauna.</li> </ul>

ISSUE	ACTION	RESPONSIBILITY	PERFORMANCE EVALUATION
<ul style="list-style-type: none"> <li>• Weeds</li> </ul>	<ul style="list-style-type: none"> <li>• Control all noxious weeds as required under the Noxious Weeds Act.</li> <li>• Progressively control all environmental weeds and replace with native vegetation where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• Illawarra Noxious Weeds Authority.</li> <li>• Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>• Progressive reduction of weed species in the surrounding quarry</li> </ul>
<ul style="list-style-type: none"> <li>• Noise</li> </ul>	<ul style="list-style-type: none"> <li>• Provide the multi-purpose active recreational facility on the upper bench.</li> <li>• Construct speed limiting devices on access roads and carparks</li> </ul>	<ul style="list-style-type: none"> <li>• Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>• Progressive implementation of noise minimisation measures</li> </ul>
<ul style="list-style-type: none"> <li>• Water Quality</li> </ul>	<ul style="list-style-type: none"> <li>• Extend the wetland areas and the planting of cumbungi and other emergent macrophytes to filter sediment and absorb nutrients.</li> <li>• Direct runoff from carparks and access roads through grassed buffer areas.</li> <li>• Periodically sample water to establish water quality parameters.</li> </ul>	<ul style="list-style-type: none"> <li>• Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>• Non-deterioration of water quality.</li> </ul>
<ul style="list-style-type: none"> <li>• Pedestrian and Vehicular Access</li> </ul>	<ul style="list-style-type: none"> <li>• Provide carparking and access roads as shown in the Master Plan.</li> <li>• Consult with NSW Police Service during design of facilities.</li> <li>• Provide locked gates to prevent vehicle access to the quarry between 5.00pm and 8.00am during standard daylight hours and 6.00pm and 8.00am during daylight saving.</li> <li>• Provide pedestrian access such as the stair link between the two quarry levels and boardwalks and other made paths in the floor of the quarry as shown in the Master Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Director Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>• Progressive implementation of access arrangements, structures and carparking.</li> </ul>

ISSUE	ACTION	RESPONSIBILITY	PERFORMANCE EVALUATION
<ul style="list-style-type: none"> <li>History</li> </ul>	<ul style="list-style-type: none"> <li>Develop an interpretative signage display which describes the history of quarrying in the Municipality and the history of this site.</li> <li>Provide a suitable memorial to those who have died in the quarry industry in the Municipality.</li> <li>Consult with the Kiama Historical Society in relation to the above actions.</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works/Kiama Historical Society.</li> </ul>	<ul style="list-style-type: none"> <li>Provision of the interpretative program and memorial</li> </ul>
<ul style="list-style-type: none"> <li>Landscape Treatment</li> </ul>	<p>Fauna Habitat</p> <ul style="list-style-type: none"> <li>Modify wetland areas.</li> <li>Plant additional native vegetation as outlined in the Master Plan.</li> </ul> <p>Minimise Maintenance</p> <ul style="list-style-type: none"> <li>Generally separate grassed areas from planting areas.</li> <li>Consider design implications for long-term maintenance.</li> </ul> <p>Shade and Amenity</p> <ul style="list-style-type: none"> <li>Provide suitable specimen trees for shade and visual impact.</li> <li>Encourage the participation and involvement of local community groups in rehabilitation and landscaping of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Director Engineering and Works</li> <li>Director Engineering and Works</li> <li>Director Engineering and Works</li> <li>Illawarra Landcare Coordinator/the Director of Engineering and Works</li> </ul>	<ul style="list-style-type: none"> <li>Progressive implementation of the works shown in the Master Plan.</li> <li>Formation of local community groups.</li> </ul>

