

Fern Bay Estate Aboriginal Heritage
Reserve
Cultural Heritage Management Plan

Winten (20) Pty Ltd

June 2006

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Fern Bay Estate Aboriginal Heritage Reserve

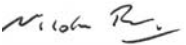

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Environmental Resources Management Australia Pty Ltd Quality System

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This cultural heritage management plan relates to a parcel of land within the Fern Bay Estate at Fern Bay, Stockton Bight north of Newcastle, New South Wales. The Fern Bay Estate covers an area of approximately 205 hectares and is the subject of a proposed residential subdivision, part of which has been approved. The Fern Bay Estate has been the subject of previous archaeological investigations (ERM 2000a, ERM 2005, ERM in prep). As a result of these investigations, it was recommended that an Aboriginal heritage reserve should be created within the Fern Bay Estate in order to retain an area that represents the key aspects of the Aboriginal archaeological record at Fern Bay.

The creation of an Aboriginal heritage reserve was voluntarily adopted by Winten (20) Pty Ltd (Winten). Winten has commissioned Environmental Resources Management Australia Pty Ltd (ERM) to develop a management plan for the area, in consultation with the Aboriginal community. The management plan discusses the significance of the Aboriginal heritage reserve and provides principles for its protection and future management. The management plan will form part of a community title agreement for the Fern Bay Estate Community Association and this group will be responsible for the management of the Aboriginal heritage reserve.

1.1***LOCATION OF THE ABORIGINAL HERITAGE RESERVE***

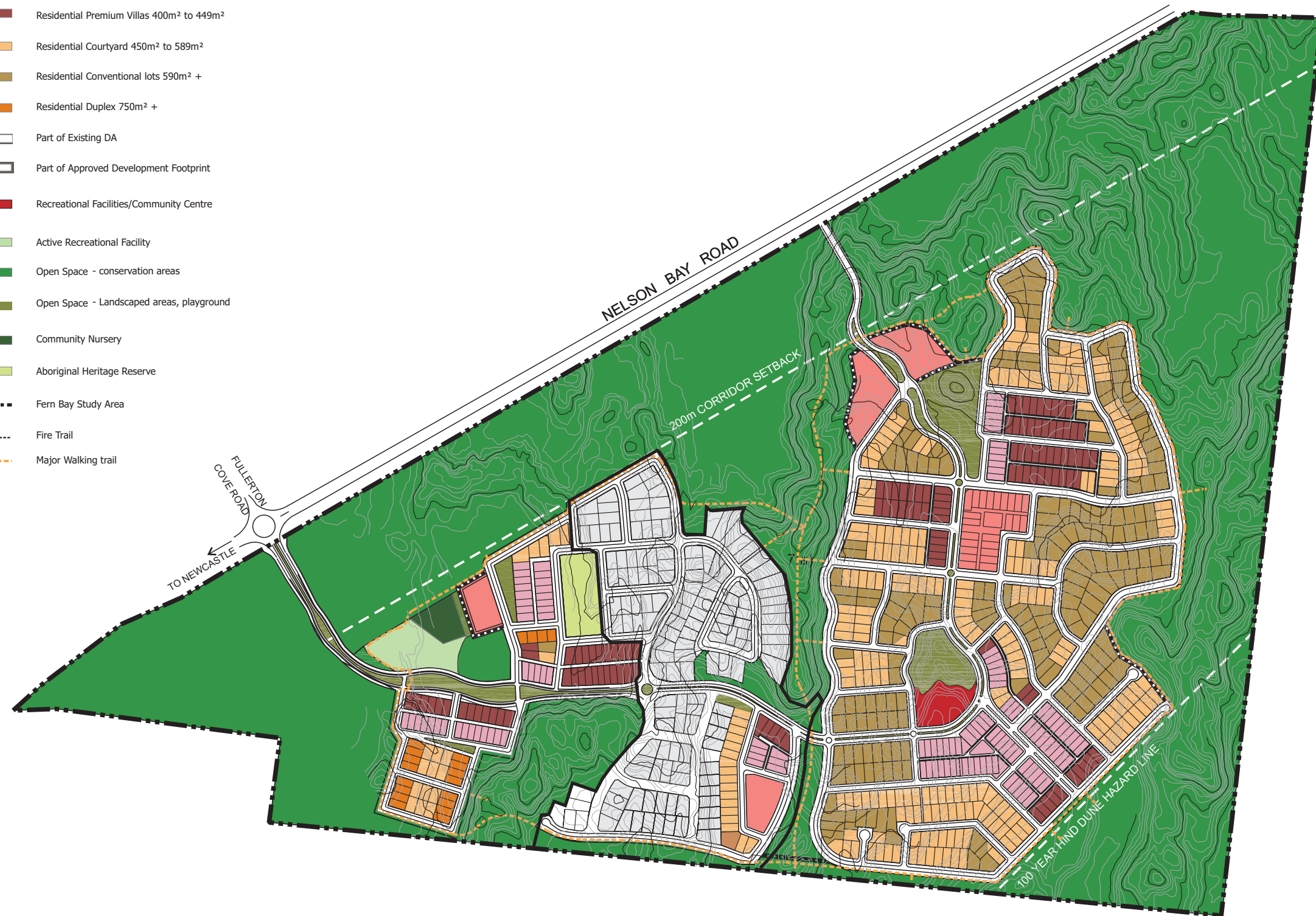
The Aboriginal heritage reserve is located within the western section of the Fern Bay Estate (refer to *Figure 1.1*), adjoining an area with existing development approval. The Aboriginal heritage reserve measures approximately 60 metres by 150 metres, encompassing an area of just under one hectare. The reserve is centred along a north-south trending dune ridge with a maximum elevation of six metres (AHD) and includes low-lying swales on either side of the central dune ridge.

1.2***DESCRIPTION OF THE FERN BAY ESTATE***

The Fern Bay Estate is proposed to comprise approximately 950 residential lots; open space reserves (including formal parks, the Aboriginal heritage reserve and conservation reserves); a community nursery; community, recreational and commercial facilities; and public roads, fire trails and pedestrian trails. The subdivision of part of the site into 208 residential lots and a school site has been approved. Works within this consent area (immediately north and east of the Aboriginal heritage reserve) have commenced. The proposed development will surround the Aboriginal heritage reserve on all sides.

LEGEND

- Residential Integrated Housing
- Residential Villas 340m² to 399m²
- Residential Premium Villas 400m² to 449m²
- Residential Courtyard 450m² to 589m²
- Residential Conventional lots 590m² +
- Residential Duplex 750m² +
- Part of Existing DA
- Part of Approved Development Footprint
- Recreational Facilities/Community Centre
- Active Recreational Facility
- Open Space - conservation areas
- Open Space - Landscaped areas, playground
- Community Nursery
- Aboriginal Heritage Reserve
- Fern Bay Study Area
- Fire Trail
- Major Walking trail



Source: Robertsdav, Town Planning Design



0 100m
Approximate only

Figure 1.1

Concept Plan of Proposed Subdivision

Winten Property Group - CVC Limited - Fern Bay Estate

1.3

OBJECTIVES

The cultural heritage management plan is designed to ensure that the Aboriginal heritage reserve is protected in a manner that retains its significance to the Aboriginal community and to the broader community (as will be discussed in *Section 4*). Therefore, the objectives of the management plan are to:

- protect the surface and subsurface archaeological deposit from disturbance associated with development and use of the area by Fern Bay Estate residents and visitors;
- retain an area that preserves archaeological material in its natural context and provides an example of the type of environment occupied by Aboriginal people in the Fern Bay region; and
- provide an appropriate place in which archaeological material from the Fern Bay Estate can be stored and protected.

In order to achieve these objectives, a clear set of guidelines relating to future use of, and access to the area, and its general maintenance have been provided. The management plan has been developed in consultation with the Aboriginal community and Winten and it is intended that this consultation will be ongoing and may also involve the Fern Bay Estate Community Association.

The Aboriginal heritage reserve is situated on a low dune ridge within the Fern Bay Estate and includes low-lying areas to the east and west of the central dune ridge. The Aboriginal heritage reserve contains two recorded Aboriginal sites, Fern Bay Estate Site C and Fern Bay Estate Site 8. These sites contained shell and stone artefacts that were present above and below the ground surface. The maximum depth of archaeological material was one metre at Fern Bay Estate Site C and 80 centimetres at Fern Bay Estate Site 8 (ERM 2001). As will be discussed below, these sites should be considered as part of a single site.

2.1.1 *Environmental Context*

The Aboriginal heritage reserve is located within Stockton Bight, which is a large coastal barrier system composed of an inner barrier and an outer barrier. Formation of the inner barrier began during the Pleistocene following a peak in sea levels approximately 120,000 years ago. From approximately 116,000 years ago, the climate again became colder and drier and sea levels retreated until they were approximately 30 metres below current levels. Between approximately 10,000 and 6,500 years ago, the climate became warmer and wetter and sea levels gradually rose, stabilising at current levels approximately 6,000 years ago. The rise in sea level pushed former beach sands landward, creating the outer barrier.

In the Fern Bay area, the formation of the outer barrier was followed by two (and possibly three) periods during which dunes formed by the accumulation of windblown sands were stabilised. The periods of stabilisation occurred between 4500 and 3000 years ago and 1200 and 300 years ago (refer to ERM in prep a). The Aboriginal heritage reserve is located on the dune field that dates to the period of stabilisation between 4500 and 3000 years ago.

The vegetation within the Aboriginal heritage reserve consists of coastal sand apple blackbutt forest along the central ridgeline and swamp mahogany-paperbark forest on the low-lying areas. These vegetation communities contain a range of plants that were used by Aboriginal people and also would have supported a broad variety of animal species (refer to ERM in prep). The Aboriginal heritage reserve remains relatively undisturbed, with the exception of a disused vehicle track and a small pumping station that will be constructed on the eastern boundary of the reserve.

2.1.2 *Archaeological Context*

The Fern Bay area, including the Fern Bay Estate has been the subject of numerous archaeological investigations (Koettig 1987, Dean-Jones 1992, Umwelt 1997, 2000, MCH 2004, 2005a, 2005b, ERM 2001, ERM in prep). These assessments identified the richness of the archaeological record in the area

and more specifically demonstrated the archaeological sensitivity of the dune field within the Fern Bay Estate.

Following initial survey of the area, Koettig (1987) suggested that artefactual stone and shell would be present across the ridges of the 4500 year old dunes. Dean-Jones (1992) then conducted a survey and test excavation program within the area that now forms the Fern Bay Estate area. Dean-Jones (1992) suggested that sites within this area were concentrated in the 4500 year old dune field and that sites were more likely to be located on elevated ground in close proximity to low-lying areas in which freshwater was readily available. Based on the results of limited subsurface testing, Dean-Jones (1992:27) suggested that sites along the 4500 year old dunes are likely to have a sub-surface component that may be stratified (ie where different depositional layers have retained a degree of separation).

ERM (2001:55) undertook further testing and subsurface excavation within the Fern Bay Estate and identified the low ridgelines with access to swamp resources as being of high archaeological sensitivity. Sites Fern Bay Estate Site C (38-4-0790) and Fern Bay Estate Site 8 (38-4-0791) were identified along the low dune ridge that comprises the Aboriginal heritage reserve (refer to Figure 2.1). These sites should be considered as part of the same continuous site across the dune ridge. Excavations in the vicinity of Fern Bay Estate Site 8 identified low densities of stone artefacts and shell and a feature interpreted as a Aboriginal hearth, which was associated with a large stone artefact of a type known as a 'Worimi cleaver'. Subsequent analysis of the Worimi cleaver indicated that it probably been used to process Bungwall fern (*Blechnum indicum*). Charcoal from the hearth was radiocarbon dated and was found to be approximately 2600 years old (ERM 2001: 34-35).

Excavations at Fern Bay Estate Site C recovered high densities of stone artefacts (up to 138 artefacts per cubic metre). Large quantities of shell were present on the surface and within the upper levels of the excavated areas (ERM 2001:32). All shell in Fern Bay Estate Site C and Fern Bay Estate Site 8 was from estuarine species, indicating that people using this site exploited estuarine shellfish (available at nearby Fullerton Cove) in preference to marine shellfish available on beach front and rocky platform environments. Based on the results of the analysis of stone artefacts and shell, ERM (2001) suggested that the subsurface deposits along the dune ridge within the heritage reserve retained a high degree of stratigraphic integrity. This means that the different vertical layers of the excavation (and the evidence they contain) represent different periods during the deposition of the site. Consequently, changes between the types and densities of stone artefacts and shell excavated from the site can provide information about how people's use of the landscape and its resources changed over time and hypotheses can be established regarding the reasons for these changes. Based on the archaeological sensitivity of this area and its scientific and Aboriginal significance (refer to Section 4), it was recommended and adopted that Fern Bay Estate Site C and Fern Bay Estate Site 8 should be included within an Aboriginal heritage reserve.

Further excavations were conducted by ERM (in prep) at three locations approximately 50 metres north of the Aboriginal heritage reserve and on the same dune ridge. The results of the excavations provided further evidence of the stratigraphic integrity of deposits along the dune ridge and indicate that there may have been a change over time in the types of stone artefacts and manufacturing techniques.



0 30m
Approximate only

Figure 2.1

Excavation Locations within the Aboriginal Heritage Reserve

Winten Property Group - CVC Limited - Fern Bay Estate

Four groups currently represent Aboriginal people in the Fern Bay area: the Worimi Local Aboriginal Land Council (WLALC); Maaiangal Aboriginal Heritage Incorporated (MAHI); Mur-roo-ma Incorporated (MI); and Nur-run-gee Incorporated (NI), which also represents the Worimi Traditional Aboriginal Elders Group Incorporated. MI and NI formed during the latter portion of 2005 and prior to this, members of these organisations were consulted through WLALC. Consultation with WLALC and MAHI was undertaken during the previous Aboriginal cultural heritage assessments conducted by ERM (ERM 2001, ERM in prep) and the establishment and location of the Aboriginal heritage reserve.

This management plan was developed in full consultation with WLALC (represented by Andrew Smith), MAHI (represented by Carol Ridgeway-Bissett), MI (represented by Anthony Anderson) and NI (represented by Lennie Anderson). Initial consultation involved a meeting between the Aboriginal community representatives, Bill Sarkis (Winten), Greg Burnitt (Monteath and Powys Project Manager) and Nicola Roche (ERM). All of the attendees of the meeting were provided with a copy of the minutes of the meeting which were then used in the formulation of this management plan.

The draft management plan will be provided to all groups for their comments and modifications. An on-site meeting with all groups will then be conducted to further discuss the specifics of the management plan.

The assessment of significance is an integral component in the formulation of management plans in relation to cultural heritage resources (Pearson and Sullivan 1994:21). The Burra Charter (Australia ICOMOS Burra Charter 1999) defines cultural significance in terms of the aesthetic, historic, scientific and social value of a heritage item or place. In relation to Aboriginal cultural material, considerations of social and scientific significance are generally weighted most heavily, although other factors may also be of relevance. In this instance, the aesthetic significance of the heritage reserve should also be considered.

4.1

ARCHAEOLOGICAL (SCIENTIFIC) SIGNIFICANCE

The archaeological significance of an Aboriginal site, object or place is assessed according to its potential to address research questions and provide additional information of value to interpretations of past human activities (Australia ICOMOS Incorporated 2000:12). The assessment of scientific significance should consider the rarity and representativeness of the site and its integrity and connectedness in relation to research potential. In this instance, it is also applicable to consider the potential of a site, object or place to be used for educational purposes.

The Aboriginal heritage reserve is located in an area of high archaeological sensitivity. Subsurface testing within the heritage reserve has identified deposits of stone artefacts and shell that are more concentrated than is indicated by surface evidence and which continue to the north along the dune ridge. Deposits within the Aboriginal heritage reserve retain a high degree of stratigraphic integrity that is rare within the Fern Bay area due to the increasing levels of disturbance. The range of archaeological evidence and the environmental context in which it is present are representative of key aspects of Aboriginal use of this area in the Holocene period. Archaeological deposits within the Aboriginal heritage reserve therefore have high research potential. In terms of its education value, the archaeological material within the heritage reserve is primarily subsurface and access to the area should be managed to protect its archaeological and environmental integrity. However, the area is suitable for minimal impact visitation and low-level interpretive discussion of how Aboriginal people lived within the Fern Bay area. The Aboriginal heritage reserve is of high archaeological significance at a local and regional level.

4.2

ABORIGINAL SIGNIFICANCE

The assessment of social significance is the prerogative of the Aboriginal community and typically involves the consideration of a site(s) in conjunction with the archaeological, cultural and natural aspects of the surrounding

landscape. Aboriginal heritage (incorporating sites or features and the relationship between these) is inextricably linked to the natural elements of the landscape including (but not limited to) landscape history, topography, flora and fauna. Sites or features within the landscape are considered as part of the whole cultural landscape, which in turn has significance separate from that of the individual sites or features it includes.

The Fern Bay area is of significance to the Aboriginal community in its own right and as part of the larger cultural landscape of Stockton Bight. Areas of particular cultural significance within the existing Fern Bay township have been identified by some members of the Aboriginal community (refer to MCH 2004). Furthermore, the range of archaeological evidence within the Fern Bay area is seen to demonstrate that Fern Bay was a place that was used by Aboriginal people in the past. As a relatively undisturbed environment, the Aboriginal heritage reserve is seen as representing the type of area that Aboriginal people occupied in the past and is of importance to Aboriginal people in the present. Carol Ridgeway-Bissett (MAHI) has particularly emphasised the importance of the natural aspects of the site, including the range of flora and fauna and the relatively undisturbed nature of the Aboriginal heritage reserve, which forms an integral component of the cultural landscape.

4.3

AESTHETIC SIGNIFICANCE

The aesthetic significance of a site relates to the qualities of a site or place such as beauty, picturesqueness, evocativeness, expressiveness, landmark qualities and symbolism. The aesthetic significance of the Aboriginal heritage reserve is a subset of its natural values (as discussed above). Following completion of the Fern Bay Estate, the Aboriginal heritage reserve will be bordered by residential development and will provide an area of natural beauty with the Estate.

These management measures are formulated based on the assessment of the significance of the Aboriginal heritage reserve and the proposed future development of the Fern Bay Estate. The management measures are designed to provide a practical means to preserve the values of the Aboriginal heritage reserve discussed in *Section 4*. The management measures will form part of a community title agreement for the Fern Bay Estate.

5.1 CONTROL OF FUTURE DEVELOPMENT

There will be no further development activity (aside from the sewerage pumping station previously examined by ERM and the Aboriginal community and the management measures specified below) within the Aboriginal heritage reserve and therefore no salvage procedures will be established outside those specified below.

5.2 MAINTENANCE OF THE ABORIGINAL HERITAGE RESERVE

Management of the bushfire risk within the Aboriginal heritage reserve will be undertaken in accordance with a Bushfire Management Plan for the Fern Bay Estate (to be composed by ERM). A buffer of up to five metres on the perimeter of the Aboriginal heritage reserve may be included within an Asset Protection Zone (APZ) in accordance with the New South Wales Rural Fire Service *Bushfire Environmental Assessment Code 2006*. Details regarding the dimensions of the APZ within the Aboriginal heritage reserve will be confirmed following the completion of the Bushfire Management Plan. The Bushfire Management Plan will also outline procedures for monitoring bushfire fuel loads and determining when vegetation maintenance will be required. These procedures will be addressed in subsequent versions of this management plan.

The *Bushfire Environmental Assessment Code 2006* provides guidelines for the clearance of vegetation within an APZ. The *Conditions for Hazard Reduction and Aboriginal Heritage* (included in *Annex A*) associated with the *Bushfire Environmental Assessment Code 2006* should also be followed. As the soils within the Aboriginal heritage reserve are highly erodible and artefacts are present on the ground surface and within the upper soil levels, vegetation must be slashed at a height of no less than 100 millimetres above the ground surface, slashed vegetation should be retained to ensure that a minimum of 90 per cent ground cover is maintained and 75 per cent of tree canopy coverage should be retained. Should tree clearance be necessary, the Aboriginal community should be consulted regarding any impact that tree removal may have on the heritage value of the Aboriginal heritage reserve.

Prescribed low intensity burning is a minimal ground surface impact option identified within the *Conditions for Hazard Reduction and Aboriginal Heritage*. However, due to the surrounding residential properties, prescribed burning is unlikely to be a feasible option. Herbicides and manual clearing techniques with minimal impact on the ground surface are the preferred method of bushfire hazard reduction. Manual vegetation clearance will occur at a height of no less than 100 millimetres above the ground surface and should not involve any impacts to the ground surface. No vehicles or heavy machinery will be used during vegetation clearance. Manual clearance should involve methods such as the use of brush hooks, hand-held brushcutters, leaf blower/vacuums or other minimal disturbance methods that do not impact on the ground surface. Limited ground surface coverage (in the form of leaf litter or other vegetation matter) should be retained to minimise disturbance and the potential exposure of artefacts.

Introduced species within the Aboriginal heritage reserve should be removed using the manual vegetation clearance techniques described above.

5.3 *VISITOR USE AND ACCESS TO THE ABORIGINAL HERITAGE RESERVE*

5.3.1 *Fencing*

The Aboriginal heritage reserve should be surrounded by a low fence (less than one metre in height) that clearly demonstrates the boundary of the Aboriginal heritage reserve but does not negatively impact on the aesthetic value of the area. The fence should be in keeping with the surroundings and its construction should involve minimal ground disturbance. If possible, methods of fence construction that do not require large numbers of fence posts or subsurface supports should be used. Should the use of fence posts be unavoidable, all post hole locations will be hand augered and the augering will be monitored by members of the Aboriginal community. A Section 87/Section 90 permit may be required should the excavation of post holes be within the Aboriginal heritage reserve or outside the existing Section 90 consent area.

5.3.2 *Pathways*

Pathways providing designated access routes through the Aboriginal heritage reserve should be constructed. The pathways should provide a clear route to actively discourage people from walking through the Aboriginal heritage reserve on areas other than the designated routes. The construction of the pathways should involve minimal ground surface disturbance. The preferred method of construction is to provide a border to the pathways that sits on the ground surface and is composed of railway sleepers or a similar material. A geotextile membrane can then be laid within the pathway border and clean fill material, (in the form of crushed gravel, brick, tile or a similar material)

can be laid above the geotextile membrane. This method of construction will minimise disturbance to surface and subsurface deposits and will ensure that imported materials do not spread beyond the designated pathway.

The location and extent of pathways will be discussed on-site.

5.3.3 *Lighting*

To prevent accidents and protect public safety, it may be necessary to provide lighting within the Aboriginal heritage reserve. This will be determined following the construction of dwellings adjacent to the Aboriginal heritage reserve. Should lighting be necessary a method of supplying electricity should be used that does not involve ground disturbance for cabling, eg. all electrical wiring should be contained within the proposed pathways or solar lighting should be used. The provision of lighting should not involve any ground surface disturbance.

5.4 *ROLE OF THE ABORIGINAL HERITAGE RESERVE AS A 'KEEPING PLACE'*

The Aboriginal heritage reserve is currently used as a 'keeping place' or repository for artefacts previously excavated or disturbed under Section 87 permit N62/PRP/2000 and Section 90 permit #2026. Following analysis and recording, the artefacts excavated by ERM (2001) were placed in sealed plastic bags and reburied at a specific location within the Aboriginal heritage reserve that was recorded using a hand-held GPS. Artefacts excavated by ERM (in prep) and other artefacts disturbed during the course of works on the Fern Bay Estate will be buried according to the same procedure and in the same location. The GPS coordinates of the artefact reburial location should be provided to the Department of Environment and Conservation Information Systems Section (Cultural Heritage Division) as restricted information. The construction of a pathway across the area in which artefacts have already been reburied would be the preferred option to ensure their protection from accidental exposure. The Aboriginal heritage reserve will continue to be used as a repository for artefacts in relation to later stages of development of the Fern Bay Estate and these artefacts will be buried according to the same procedures.

5.5 *INTERPRETATION PRACTICES*

5.5.1 *Within the Aboriginal Heritage Reserve*

Signage will be developed for placement at entries to the Aboriginal heritage reserve and at various locations along the pathways. Signage at the entry points should provide a brief explanation of the length of occupation and high level of use of the Fern Bay area by Aboriginal people and should outline the

protection of Aboriginal heritage under the *New South Wales National Parks and Wildlife Act 1974*. The entry and exit signage should briefly describe the sorts of activities that are not permissible within the Aboriginal heritage reserve, namely the removal of artefacts and any form of ground disturbance or damage to vegetation. Signage along the pathways should provide an indication of the range of plant species included within the reserve and should indicate that Aboriginal people used a broad range of plant and animal resources for food, medicine, shelter and tools. The signage should not provide specific information on resource uses. All signage should be discussed with the Aboriginal community prior to erection within the Aboriginal heritage reserve.

5.5.2 *Information for Fern Bay Estate Community*

An Aboriginal heritage information sheet should be prepared for distribution to all new residents and landholders within the Fern Bay Estate. The Aboriginal heritage information sheet should provide a brief explanation of the length of occupation and high level of use of the Fern Bay area by Aboriginal people and its importance to the Aboriginal community. The information sheet should also briefly describe the Aboriginal heritage reserve, the importance of its preservation and the relevant aspects of the *New South Wales National Parks and Wildlife Act 1974*.

This management plan will be referred to the Aboriginal community groups listed in *Section 4* for review and comment. Further development of the management plan will take place in consultation with the Aboriginal community.

Following completion of the management plan, it will be reviewed as required by the Aboriginal community and Winten or the Fern Bay Estate Community Association.

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