Appendix F

Procedure for Aboriginal cultural heritage consultation and investigation assessment
Bemboka River Bridge, Morans Crossing, via Bemboka
Aboriginal Cultural Heritage Assessment Report

A Report to NSW Roads and Maritime Services
May 2013

Proponent: NSW Roads and Maritime Services
Local Government Area: Bega Valley Shire Council

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SUMMARY

This summary presents an overview of the study aims, results and recommendations.

The assessment has been conducted in accordance with the NSW Office of Environment and Heritage’s Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (NSW DECCW 2010).

The study has sought to identify and record Aboriginal cultural areas, objects or places, assess the archaeological potential of the proposal area and formulate management recommendations based on the results of background research and a field survey.

A review of the AHIMS register and previous cultural heritage assessments has been undertaken. No Aboriginal sites are known to be present within or in close proximity to the subject area. It is apparent that the AHIMS search contains certain inaccuracies. A number of sites are recordings made on Polacks Flat Road, which extends to the north of the highway, from an area east of the bridge. They have inaccurate grid references and plot off the road. One of these plots on the Snowy Mountains Highway, east of the bridge and within the area of proposed works. This site (AHIMS #62-6-410) is, however, located approximately 200 metres to the north of the highway on Polacks Flat Road.

An archaeological survey has been conducted. No Aboriginal areas, objects and places were recorded in the subject area. Furthermore, all areas in which works would occur are assessed to be of very low or negligible archaeological potential and sensitivity.

It is concluded that there are no known Aboriginal archaeological constraints to the proposal.

Acknowledgments

Archaeological evidence confirms that Aboriginal people have had a long and continuous association with the region for thousands of years. We would in particular like to acknowledge and pay our respects to the traditional owners of the country which is encompassed by the proposal.
Figure 1 Location of the subject area (Bemboka 8824-45 3rd ed. 1:25,000 topographic map).
1. INTRODUCTION

NSW Archaeology Pty Ltd has been commissioned by the NSW Roads and Maritime Services (RMS) to conduct an Aboriginal archaeological assessment of various impact areas associated with proposed bridge works at the Bemboka River Bridge, Morans Crossing, via Bemboka.

Moran’s Crossing is located on the Snowy Mountains Highway, 8.6 km east of Bemboka and 26.9 km west of Bega. The area in which impacts are proposed is shown on Figure 1.

The project objectives are to widen the bridge to accommodate to capacity of Higher Mass Limit (HML) vehicles, allow for cycle facilities and to provide new concrete safety barriers on both sides of the bridge. As part works the road approaches on both sides of the bridge will be upgraded to improve safety.

This Aboriginal archaeological report would inform a Review of Environmental Factors for the project. RMS is the consent authority in regard to the proposal.

The Aboriginal archaeological assessment has been managed and conducted by Dr Julie Dibden, NSW Archaeology Pty Ltd. Ron Thomas, sites officer from Bega Local Aboriginal Land Council, assisted with the field inspection.
2. DESCRIPTION OF DEVELOPMENT PROPOSAL

In this section, the nature and extent of the proposed activity, and any potential harm to Aboriginal areas, objects and/or places is identified. A summary of the impact history of the study area is outlined and a full description of the proposal and its potential impact on the landscape and heritage resource is described.

2.1 Previous Impacts

The local area has been utilised for stock grazing since the early 1830s. The effects of grazing have included vegetation loss and subsequent erosion, primarily by water, and soil compaction due to stock treadage.

However, previous impacts to land surfaces in the subject area relate predominantly to original bridge and road construction. Impacts are likely to have included clearance, leveling, excavations and general work site disturbance (see Plates 1 and 2).

Land clearance, bridge works and subsequent erosional processes are likely to have resulted in varying levels of prior impacts to Aboriginal objects. Aboriginal objects located in or on the ground will have been disturbed and/or moved, resulting in loss of their original depositional context (both spatially and vertically). It is emphasised that prior and existing land uses and geomorphological processes have caused significant changes with an associated effect on the potential archaeological resource.

Plate 1 Large cleared area at c. 100m east of the bridge on the south side of the highway, currently used for stockpiling; looking 200°.
2.2 Proposed Impacts

The existing bridge will be widened by approximately 6.0 to 6.5m, which will result in lane widths of 3.5m, a minimum shoulder width of 2.0m and new concrete safety barrier on both sides. To achieve this will involve the construction of a separate new bridge directly parallel to the existing bridge. The new bridge would be completely structurally independent to the existing bridge. The new bridge would have a wire rope medium barrier to separate the opposing lanes.

The extent of road works extends approximately 420m east and 590m west of the existing bridge. Both approaches consist of a two lane road with a lane width of 3.4m and a shoulder width of 0.5m. The existing lane widths gradually reduce from 3.4m to 2.5m from approximately 110m from either side of the bridge. The road works will involve upgrading these approaches to achieve lane widths of 3.5m and a shoulder width of 2.0m. On the western approach, there will be significant works to increase the existing cutting by up to 28m in some sections (Plate 3).
2.3 Type of Harm

The nature of the proposed works are comprised of ground disturbance which would cause impacts to any Aboriginal objects or places which may be present. However, it is noted that the majority of impacts would occur on land which is significantly disturbed as a result of previous impacts, including road and bridge construction works.
3. PREVIOUS ARCHAEOLOGICAL WORK

3.1 Review of Previous Archaeological Work

Aboriginal people have occupied Australia for at least 40,000 years and possibly as long as 60,000 (Bowler et al. 2003; Mulvaney and Kamminga 1999: 2). By 35,000 years before present (BP), all major environmental zones in Australia, including periglacial environments of Tasmania, were occupied (Mulvaney and Kamminga 1999: 114). At the time of early occupation, Australia experienced moderate temperatures. However, between 25,000 and 12,000 years BP (the Last Glacial Maximum), dry and either intensely hot or cold temperatures prevailed over the continent (Mulvaney and Kamminga 1999: 114). At this time, the mean monthly temperatures on land were 6 - 10ºC lower; in southern Australia coldness, drought and winds acted to change the vegetation structure from forests to grass and shrublands (Mulvaney and Kamminga 1999: 115-116).

During the Last Glacial Maximum at about 24 - 22,000 years ago, sea levels fell to about 130 metres below present and, accordingly, the continent was correspondingly larger. With the cessation of glacial conditions, temperatures rose with a concomitant rise in sea levels. By c. 6,000 BP, sea levels had more or less stabilised to their current position. With the changes in climate during the Holocene Aboriginal occupants had to deal not only with reduced landmass, but changing hydrological systems and vegetation; forests again inhabited the grass and shrublands of the Late Glacial Maximum. As Mulvaney and Kamminga (1999: 120) have remarked:

*When humans arrived on Sahul’s¹ shores and dispersed across the continent, they faced a continual series of environmental challenges that persisted throughout the Pleistocene. The adaptability and endurance in colonising Sahul is one of humankind's inspiring epics.*

Radio carbon dating of cultural deposits indicates a Pleistocene antiquity for the occupation of the NSW south coast and its hinterland (eg. Boot 1996, 2002; Lampert 1971; Ossa et al. 1995). The nature of Pleistocene occupation in south-east Australia is generally thought to have been sporadic and of low intensity, reflecting low population levels (McDonald 1994: 67). For sites such as Sassafras, Burrill Lake, Bass Point and Currajong to the north, it has been argued that they possess evidence of increases in the intensity of site occupation and population during the mid to late Holocene (Hughes and Lampert 1982). Based on observed increases in sedimentation rates and implement discard in rock-shelters in the southern part of the Sydney Basin, Hughes (1977; Hughes and Lampert 1982: 26) proposed that a region wide intensification in site use and population increase occurred between 5,000 and 2,000 years BP. This argument has been critiqued by a number of researchers. As Boot (2002: 19) has summarised, ‘[t]he archaeological evidence is still not understood well enough to support definitive statements about Aboriginal occupation in the different ecological zones of the hinterland, let alone any alleged changes in subsistence strategies and population levels in the region’. As more work has been undertaken in more sites, and in sites with long periods of occupation, both the substantive and theoretical foundations of the intensification model have required review.

Boot’s (2002: 220) research identified that the south coastal hinterland and adjacent coast was first occupied before 19,000 years BP, and that early occupation of the hinterland ‘... appears not to have been intensive’. Throughout the Holocene, occupation levels fluctuated with sites being temporarily or permanently abandoned at different times, and the intensity of occupation varied between sites (Boot 2002: 220). Boot (2002: 225, 244) argued, that since the late Pleistocene, the archaeological evidence

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¹ Sahul is the name given to the single Pleistocene era continent which combined Australia with New Guinea and Tasmania.
indicates that a generalised subsistence economy was practiced in the south coast region, and that there is no evidence of a region wide increase in artefact discard rates and intensity of site use during the mid to late Holocene. Instead it was found that not only was there evidence of considerable inter and intra-site variability in rates of artefact discard and intensity of site use, the notable pattern was one of a series of peaks and troughs indicating significant variations in the intensity of site use, both from the late Pleistocene through to the early Holocene, and during the mid to late Holocene (Boot 2002). Boot (2002: 245) argued that the evidence reveals numerous fluctuations in intensity of site occupation over time and, furthermore, he says that these variations could not be correlated directly with long-term variation in environmental changes.

A new adaptive model, based on analyses of backed artefacts, has recently been proposed which has implications for behavioural change during the late Holocene. Backed artefacts have been made and deposited in south-east Australia since 9,500 years ago (Hiscock & Attenbrow 1998). They dramatically peaked in abundance after 3,500 years ago, which was maintained until 2,000 years ago when their number began to decline. Hiscock (2008: 156, 158) has hypothesised that the backed artefact proliferation was a response to economic risk associated with the onset of drier and more variable climatic conditions in southern Australia related to the intensification of the El Niño system. Additional factors, which may have triggered higher foraging risk, have been posited, including landscape colonisation, redefinition of social space, landscape change, reduction of resources and greater foraging mobility (Hiscock 2008: 158). It is noted also that ground-edge hatchets were adopted as a new technology in south-eastern Australia at c. 3,500 years ago at the same time as the backed artefact proliferation. This technology is also likely to have helped deal with foraging risk (Dibden 2011).

While the above discussion has focused on chronological change in the archaeological record, researchers have also examined the subsistence strategies employed on the south coast, and how people organised themselves in respect of coastal and hinterland resources. Several models of Aboriginal occupation have been proposed (cf. Boot 2002: 7). Bowdler (1970: 5, 111) argued that during summer, Aboriginal occupation of the coastal zone was intensive and dense, and that some inland exploitation occurred during seasons when coastal resources were limited. Lampert (1971: 63) proposed a model based on a mixed coastal economy involving the exploitation of littoral, estuarine and land resources. Similarly to Bowdler, however, Lampert argued that littoral resources contributed a much higher component to the Aboriginal diet than that which may have been obtained from the forest. Lampert’s model included a differentiation of coastal sites based on different forms of resource exploitation including main sites (base camps), specialised sites and a third category of overnight camps (Lampert 1971: 62-64). Poiner (1976) proposed a model of seasonal differentiation in which semi-nomadic occupation of the coast occurred during summer and nomadic winter occupation of both hinterland and coastal areas. This model was based on the assumption that hinterland sites are small, widespread, and few in number (Boot 2002: 7).

These early models have been subject to various reviews. Attenbrow’s (1976: 66, 121-3) model of resource exploitation and movement posited that the hinterland and coastline were occupied on a year round basis, and that movement occurred only at the family or small group level, rather than as seasonal movement of entire populations. While arguing that coastal occupation was greater during summer when the resources of the sea were more abundant, Attenbrow suggested that people living on the coast would also have harvested terrestrial resources. Attenbrow also considered in greater detail the nature of hinterland occupation and argued that in summer, large groups would have occupied valleys, while small family groups exploited resources in the mountains. Conversely, family groups would have been more widely dispersed throughout the hinterland and along the coast during winter. Each of these
groups, and particularly those on the coast, had a higher proportion of animal foods in their diet during the colder months. Vallance (1983: 27-8) also moved beyond a strictly seasonal model and argued the economy was likely to have been based on a range of subsistence strategies that varied within and between seasons, and from year to year. Vallance (1983: 62-4) argued that short-term climatic variation would have affected subsistence strategies rather than longer term seasonal variation. Hiscock (1983: 43) argued that considerable movement between the south coast and its hinterland occurred. He found associations of stone from hinterland sources with stone derived from the coast, and argued that this indicated that occupants of hinterland sites had an intimate knowledge of resources in both areas and that, therefore, they were not just ‘short-term refugees’ escaping winter coastal food scarcity.

As far as possible, an ethnographic and historical review of Aboriginal life in the region will be outlined below. However, our understanding of Aboriginal people in this area and the historical dimension of the colonial encounter has been reconstructed from scant historical records produced during a context of death and dispossession (Swain 1993: 115); it is sketchy and severely limited. Stanner (1977) has described the colonial and post-colonial past as a ‘history of indifference’, and this portrays both the substantive situation which prevailed and the general lack of regard for this history. For a considerable period of time after Europeans arrived in Australia, no concerted ethnographic investigations were undertaken to learn about the customs, practices, arts, or traditional life ways of Aboriginal people. As a result, in trying to reconstruct the complex traditional cultures of varying Aboriginal groups, investigators of today are necessarily required to piece together, as best as possible, fragmentary information derived from the incidental annotations of disparate early observers. As elsewhere, this applies also to the Aboriginal peoples who occupied the country of the study area.

Howitt (1904: 81-81) identified the people of the Far South Coast as the Yuin ‘tribes’, also called the Coast Murring tribes. The Yuin boundaries extend along the coast, from the north at the Shoalhaven River, south to Cape Howe (Mullet 1996: 5). The Bidawal group occupied land between Cape Howe and Point Hicks on the coast, and inland to Delegate (Tindale 1974). The Ngarigo held a large territory that included the Monaro tablelands, the Bombala River from Delegate to Nimmitabel, and the Alps to the west.

Along the coast, Howitt (1904) identified a cultural division between people of the north and those of the south, located somewhere between Moruya and Ulladulla. The Bega Valley was occupied by Djiringanj speaking people (Eades 1976; Tindale 1974). Tindale (1974) described the territory of the Djiringanj as extending from Wallagoot Lake, north to Narooma, and inland to the escarpment of the Great Divide east of Nimmitabel. Eades (1976) describes the Dyirringan language as being spoken in the area between Wallaga Lake and Twofold Bay, with the Thawa language spoken south of Twofold Bay.

Prior to European occupation, the Aboriginal people in the south east practiced a hunting, gathering and fishing economy. Robinson (in Mackeness 1941: 335-336) described the economy of the Bega Valley people, for example, as follows:

> ... the zamia (is common) on the ranges ... the nuts are collected in large quantities and by the Blacks called Unggon. The Cabbage Palm ... is another article of subsistence ... The Phascomolys (Wombat) and the fish are the chief support of the natives, the latter are taken in Weirs, Eels and other fish in ponds are stupefied by an infusion of bark.

Robinson (1844) noted that fish weirs allowed large numbers of people to come together for sustained periods given that they provided an abundant source of food. Observations from the Bega region indicate that Aboriginal people relied heavily on coastal resources such as fish and shellfish, and that camps were located on coastal dunes or in forests within close proximity to the coast (Sullivan 1982).
Ethno-historical records note that fishing methods utilised on Black Ada Lagoon, situated near Tathra, involved a combined effort of people driving fish to one end of the lagoon where they could be easily speared (Smith 1970: 5).

Lieutenant James Cook is credited as being the first European to sight the coastline of the area when he sailed northward in the HMS Endeavour on April 21 1770. From a distance of some 25 kilometres out at sea, he named the prominent feature of the district, Mt Dromedary (which we would now call Gulaga).

The first European people to travel through the region were the shipwrecked crew of the Sydney Cove, who in 1797, en route from Calcutta to Port Jackson, ran aground at Cape Everard (in Victoria). Five Europeans and twelve East Indian crew members struggled north towards Sydney through the thickly timbered coastline, spending a night with members of the local Walbanja group, who then ferried the party across the river in their watercraft (Hearn 1996).

George Bass and his crew in the longboat ‘Tom Thumb’ were the first Europeans in 1797 to visit Twofold Bay (Toghill 1984). Records made by commentators reveal a number of observations relating to Aboriginal people in the area at the time of early European occupation (Heffernan and Boot 2000). Observations from the Bega/Eden region indicate that Aboriginal people relied heavily on coastal resources such as fish and shellfish and that camps were located on coastal dunes or in forests within close proximity to the coast (Sullivan 1982). In October 1798, people were seen in canoes in Twofold Bay (Bass 1799, cited in Heffernan and Boot 2000). In 1814 Flinders recorded people consuming the flesh of a beached whale in the bay (Heffernan and Boot 2000).

The first settlement in the Eden district took place in 1828 when Captain Thomas Raine established a shore based whaling station at Snug Cove on the shores of the Twofold Bay. From this time, sloops and ketches regularly plied the coast between Sydney and Eden, and in 1834 Governor Bourke sailed as far south as Twofold Bay in a journey of inspection of the south coast. His party rode on bridle tracks through Merimbula, Tura, Bournda, Bega and along the coast to Bermagui.

In the late 1820s, the Bega area was occupied by squatters. The Bega valley was fertile and highly suited to agriculture; the country was undulating, sparsely treed, blanketed in long grass and well watered (Bayley 1942). It is highly probable that the vegetation structure which existed at the time of initial European contact was a result of Aboriginal land management practices. Early commentators also remarked upon the abundance of emus, kangaroos, koalas and ‘wild fowl’, which then provided both Aborigines and Europeans with food, but now, are largely absent from the settled areas in the region.

Cattle were brought into the district in 1830, at which time conflict between Aboriginal people and the cattlemen (and their stockmen) is recorded to have occurred (Bayley 1942). By the early 1830s, land on the Monaro and the south coast was occupied by squatters and their cattle. As elsewhere, the first squatters to arrive took up the best land in terms of its fertility and proximity to water. This land would also have been favoured land occupied by Aboriginal people. By 1834, Governor Bourke upon visiting the district, reported that the use of the land was already contributing significantly to the wealth of the colony (Bayley 1942). The Aboriginal people around Bega did not readily give way to the European occupation, and this factor coupled with other difficulties, resulted in the abandonment of Warragaburra on the Jellat Jellat flats near Bega.

Warragaburra was, however, soon re-occupied by the Imlay brothers. During the 1830s and 1840s, the Imlay brothers held properties which extended from Bittangabee, south of Eden, to the Murrah and
Cobargo (Wellsing 1966: 6). During the Imlay’s occupation of the area, cattle, sheep and fine horses were bred and exported to other Australian colonies, and as well, to New Zealand and England. Fruit and vegetables were also produced in abundance and shipped elsewhere.

According to Wellsing (1966: 7), the Imlays were regarded as ‘safe people’ by the Aborigines who were employed in both their agricultural and whaling ventures. It is likely that by the late 1830s to early 1840s Aboriginal people began to find both employment and other advantages by forging close relationships with individual European men and women. Lambie (cited in Bayley 1942) reported in 1842 that ‘a good many’ Aboriginal people were employed on coastal properties, hoeing and reaping maize, and sheep washing. Referring to Aboriginal people employed by the Imlays in whaling, Lambie (cited in Bayley 1942) stated that after the season, ‘they all returned to their tribes in the bush’. While in the early days of settlement, Aboriginal groups had continued access to some lands and maintained many cultural and social traditions (Chittick & Fox 1997: 191), nevertheless, initial European settlement caused immense disruption, devastation and change to personal lives, relationships to country, and the fabric of Aboriginal social and economic life.

After the initial encroachment of European occupation, Aboriginal people continued to find employment within the new settler economy. On the south coast during the 1800s, Aboriginal people ran their own farms, businesses and contributed significantly to pioneering; they established a valuable place within the new society (Rose 1990: 41). In the early days of settlement they had continued access to many lands and maintained many cultural and social traditions (Chittick & Fox 1997: 191). People continued to pursue a rich cultural life, both ‘traditional’ and introduced. For example, the first Wallaga Lake school teacher found it difficult to interest the men in adult education because they were engaged by Cricket Clubs for the season (Rose 1990: 41). European bean growers of Bega Valley were concerned also, that due to Cricket commitments, they were finding it hard to find Aboriginal pickers.

Rose (1990: 42) has argued that the Yuin peoples successful efforts to peacefully accommodate Europeans and to adapt to the new society was systematically destroyed by the Aborigines Protection Board, which in 1884, adopted the policy of concentrating Aboriginal people on settlements. It was during this period that Aboriginal people ceased to perform their ceremonies. However, the Yuin people of the south-east coast ‘... still maintain and practice ethical, moral and custodial roles in relation to their sacred places in the landscapes’ (Mullet 1996: 17).

The study area is located within the Bega Local Aboriginal Land Council area.

3.1.1 Previous Assessment in the Local Area

There have been a limited number of archaeological studies conducted within the region in which the study area is situated. The following discussion includes archaeological work and its results conducted within the wider area.

One of the preliminary consultancy projects undertaken on the south coast was conducted by Sullivan and Gibbney (1978). The study was aimed at identifying and recording locations containing evidence of Aboriginal and early non-Aboriginal occupation. Two hundred and eleven Aboriginal sites were listed during the survey. Site types recorded include shield and canoe trees, surface campsites, hatchet grinding grooves and stratified deposits including open shell middens and rock shelters (Sullivan and Gibbney 1978: 197). From this time archaeological investigations of the New South Wales south coast
region have escalated. The majority of these studies have been conducted within the context of the environmental impact assessment process.

In a survey conducted on Mumbulla Mountain in what is now Biamanga National Park, Hughes and Sullivan (1978) recorded four open artefact scatters. Quartz dominated assemblages. Two of the sites were found in saddles on the slopes of the mountain, one on the banks of Mumbulla Creek and the other on a ridge top. Egloff (1979) recorded seven open artefact scatters. Byrne (1983a) completed the archaeological research component of the study which Egloff had begun in the Five Forests, including Mumbulla State Forest, in relation to the impact of woodchip logging. A 20 per cent sample of the five forests was conducted and 17 sites recorded (site density = 1 site per 2.9km square.) Byrne (1983a: 60) argued that this density was probably an under representation. A further 39 sites were located outside the 20 per cent sample area. In the Five Forests, 29 out of 41 sites were recorded on ridgelines. Byrne (1983a: 68) found that sites fell into two groups: - coastal sites adjacent to coastline estuaries and coastal lagoons, and inland sites situated between 12 and 18 km from the coast. A seven km belt separated the two site groupings and Byrne argued that the pattern was real. He suggested that the hinterland was exploited within a radius of 10 kilometres from a coastal site, but that it was used on a daily basis. Beyond this distance, overnight stays would have been necessary as people exploited the forest and fresh water environment and participated in sacred ceremonial activities in places such as Mumbulla Mountain (Byrne 1983a: 69). Most of the hinterland sites were situated close to water ‘strung out along Mumbulla Creek and the Murrah River’. This patterning was explained in that these water courses were the only potable water available of any significance. Byrne also argued that these water courses would have served as avenues for movement into and through the inland zone.

Hiscock (1983) analysed the stone assemblage from the Mumbulla sites and found that quartz was the dominant raw material, with silcrete, acid volcanics and quartzite occurring at much lower frequencies. Flakes are the dominant artefact type, this being a factor of quartz knapping. Quartz was found to be highly reduced. Retouch on artefacts was confined to non-quartz items. Only the quartz was worked on site, non-quartz material was transported to sites in finished form. Quartz was found to be readily available at most sites. The assemblages tended to be of low density. The preponderance of quartz and common use of bipolar knapping suggests an age of less than 1000 years. A flake made on glass indicates use during the historic period.

Based on this survey, Byrne (1983a) produced a model of site distribution which predicted that sites will be situated on low spurs within a few hundred metres of creek and river beds and on flat landforms such as saddles and along the spine of ridges.

Byrne (1983b) surveyed Loggable Block One on Mumbulla Mountain (measuring 9 km square) in response to planned thinning operations of Timber Stand Improvement zones. Given the presence of dense timber, the majority of the study area was unable to be adequately surveyed. Survey was confined to areas of predicted sensitivity and no sites were located. This negative result was explained in terms of the high levels of ground disturbance in areas subjected to previous integrated logging operations.

Bowdler (1982) conducted a limited survey of an 8 km square area in Loggable Block 4 of Biamanga Aboriginal Place, on the east side of the Murrah River. Survey was confined to locations which were predicted to be sensitive. One previously recorded site was relocated. No additional sites were recorded. Bowdler (1982) argued that the negative result did not invalidate the predictive model.
Paton (1985) surveyed the route for a proposed water pipeline extending from Bega to Tathra. No Aboriginal sites were identified, however given the circumstance of a linear survey across a disturbed landscape Paton (1985) indicated that these findings could not be taken to either validate or invalidate predictive archaeological models for the area.

Numerous surveys have been conducted within the area now encompassed by the South East Forests National Park. Feary (1986) conducted a survey in the Coolangubra, Bondi and Tantawangalo State Forests. Twenty eight sites were recorded (apparently not listed on AHIMS), most of which were scatters of 2 to 15 stone artefacts. One site at Sheep Station Creek is a large assemblage.

Byrne and Smith (1987) conducted a survey for Aboriginal sites in selected locations within the state forests of the Eden and Bombala areas. Twenty two sites were recorded nineteen of which were artefact scatters. The remainder included a midden, stone arrangement and quarry. Fifty percent of the open sites were situated in saddles, 25% on ridge summits and 25% on creek banks/flats. Artefact numbers and densities were found to be low, however, poor visibility variables encountered at sites was suggested to explain this feature. Byrne and Smith (1987) noted that the results of this survey indicate a departure from previous forest models (i.e. the Five Forests or Wandella-Dampier models discussed earlier), with the larger proportion of creek orientated sites. It was argued that the ridgeline model is most effective in predicting site location in steeply dissected country where gully bottoms are ‘V’ shaped, where flat ground is restricted to ridge tops and where cross-country movement is mostly only practicable via ridges. By contrast in the Eden area, the terrain is more undulating and hence there is greater potential for cross country movement to be more open and a greater range of potential site locations area available.

Egloff (1987) conducted an assessment of the places of cultural significance to Aboriginal people in the southern portion of the Eden Woodchip Management Area. This area encompassed the forests between Merimbula in the north, Cann River in the south, and westward to Bombala. He found that Aboriginal people did not reside on a permanent basis in the area, that little direct knowledge of the landscape was held by those interviewed and there is little second hand knowledge of the area. Egloff concluded that Aboriginal knowledge of the area is limited and no knowledge of the location or names of places of significance was offered.

Byrne (1990) conducted a survey of various roads and works proposed by the NSW Forestry Commission of NSW in the Eden and Bombala areas. Numerous artefact scatters and isolated finds were recorded. All scatters were situated on flat locations on ridgelines and contained low artefact numbers. The artefacts were predominantly quartz. Byrne (1990) considered the possibility of archaeological deposits being associated with any of the sites to be small. The distribution of sites conformed to a model of sites situated in flat locations on ridgelines, however, the presence of Wog Way#2 situated close to a watercourse was argued to perhaps support the notion that watercourses were a focus for larger or more frequent camps (Byrne 1990).

Paton (1993) surveyed the route for a proposed optic fibre cable running north from Bega to Galba, covering a 43 km linear course. Three sites were located; two sites were situated on ridgelines overlooking watercourses and the third was located on a flat adjacent to a creek. All sites were open campsites comprised of stone artefact scatters.

Kuskie (1994) conducted a survey of a five hectare area situated approximately seven kilometres north of Brogo. The study area was located 500 metres north of the river within a zone of lower elevation...
ridges, hills and drainage channels. The study area encompassed part of a flat level knoll and steep simple slopes. Most of the area was assessed to be of low archaeological sensitivity. No sites were found and this result was considered to be a reasonably accurate reflection of the sensitivity of the study area.

Barber (1995) surveyed the areas of impact associated with the proposed construction of an Optus communications tower located 2.5 kilometres west of Bega. No Aboriginal sites were located and this was explained to be due to the general steepness of the terrain which would have been unsuitable for campsites.

Dearling (1996) conducted various surveys throughout the forested south coast hinterland, including areas within Wadbilliga National Park, as a component of his BA (Hons) research. Numerous artefact scatters were recorded.

Saunders (1997) surveyed a granite extraction pit site located 15 km northwest of Bega and consisting of an eight hectare parcel of land. The archaeological potential of the area was assessed to be low given the nature of the terrain and absence of reliable water. No sites were found and this result was argued to be an accurate reflection of the potential of the area.

Barber (2001a) conducted a survey of the Waratah Gully visitor precinct in the South East Forests National Park. He recorded five quartz artefacts over an area measuring 60 x 20 m at the site of a proposed carpark/picnic area at the west end of the Pheasants Peak Fire Trail. No Artefacts were recorded at the proposed Waratah Gully camping area, but it was assessed to be of high archaeological potential. Barber (2001b) conducted subsurface excavation at that area, and found no artefacts. Excavation was also conducted at a proposed campsite at Nunnock Swamp. No artefacts were retrieved in that locale either.

Steele et al. (2001) conducted a survey of the Bega High School site. No sites were recorded however this was attributed at least in part to low levels of ground surface visibility. Steele et al. (2002) conducted subsurface investigations at the site at which time 19 stone artefacts were recovered. The low levels of artefact density were attributed to prior disturbance.

Dearling (2002) conducted research in the Bega Valley based on a sampled survey of five areas. 119 open artefact scatters and 62 isolated finds were recorded with the highest percentage of sites occurring in areas that were formerly dry grass forest. The most complex sites were found to be situated close to the transition zones at ecotone boundaries (Dearling 2002: 21). Dearling (2002: 21) concluded that Aboriginal people utilised almost all hinterland environments and that the level of exploitation depended on resource availability within the particular environment.

Approximately 8,000 ha of country (The NSW State Forests Eden Management Area) extending from the tablelands near Nimmitabel, Bombala and Delegate to the coast near Wallaga Lake, Bega and Eden was investigated during 1997-1998 by the NSW National Parks and Wildlife Service. A total of 339 previously unrecorded sites were located comprising open artefact scatters, isolated finds, scarred trees and a stone quarry. Eighty one percent of sites were located on ridges (Heffernan and Boot 2000). Based on the known population and density of sites a predictive study has indicated that over 11 million sites may remain undiscovered within the EMA. Based on survey data the most likely locations of Aboriginal sites are identified to be: ridges and flats with slopes of 10° or less; all elevations below 1300m above sea level; areas of granite and sedimentary geology; areas which once contained lowland and mid altitude
forests and in areas presently vegetated with dry forest and woodland. The Polack Flat Road sites listed on the AHIMS search (Appendix 2) were recorded during that study.

Boot (2002) conducted an excavation of a rock shelter, Burke’s Road 2 in Wadbilliga National Park, within the programme of works encompassed by his Doctoral research. The excavation revealed an archaeological deposit containing stone artefacts and charcoal with small amounts of bone and shell. Quartz artefacts dominated the lithic assemblage of 2,400 artefacts; volcanic and chert artefacts were also present. Boot (2002) noted that this pattern reflected the composition of open scatters in this area which are dominated by quartz artefacts. The site was first occupied in the mid Holocene and its use appears to have continued into the recent past, perhaps into the contact period. Boot (2002) has argued that the site was intensively used between 2,800 and 3,000 years BP, at which time it is likely to have been used as a major base camp and to have been continuously occupied for extended periods.

Saunders (2003) surveyed the “Glen Mia” 35 hectare subdivision area on the southeastern outskirts of Bega (immediately north of Site 1). The area consisted of moderately inclined slopes separated by intermittent streams. Two scarred trees and four areas of archaeological potential were recorded. Ground visibility and hence the potential to locate artefactual material was low during the survey.

Barber (2003) documents the heritage assessment of a proposed walking track along Myanba Creek within Coolangubra National Park. A 20km long survey was conducted by Bobby Maher, Eden Local Aboriginal Land Council. The area consisted of low gradient slopes situated above the creekline. A single sparse density artefact scatter was recorded on the crest, shoulder and side slopes of a spur.

Saunders (2004) subsequently conducted subsurface testing and the salvage of artefacts in four PADs at “Glen Mia”. A total of 32 artefacts were recovered at an overall average density of 0.015 artefacts/m² and a highest density of 0.04 artefacts/m². All four identified PADs were found to contain a low density of artefacts only. The dominant artefactual raw material was quartz, with some volcanics and chert.

Dearling (2004) conducted a preliminary study of ten selected nature reserves in the Monaro region as part of the preparation of a plan of management by the NPWS. In total, 167 artefacts were recorded in 13 open artefact scatters as well as 2 probable Aboriginal Scarred Trees, within six of the ten nature reserves. Included in this study are the Kybeyan Nature Reserve and the Kybeyan State Conservation area near Wadbilliga National Park. From the results Dearling (2004) determined that the findings supported an assumption that more complex assemblages are located close to ecological boundaries and that in forested mountainous areas major sites will be found close to permanent water sources on locally elevated well-drained land features.

Saunders (2005) surveyed areas of Kameruka Estate, southwest of Bega, in relation to a proposed rural subdivision. The area measured 103 hectares. Three possible Aboriginal scarred trees were recorded, one isolated find, and four areas of potential archaeological deposit (PAD). The three possible scarred trees and isolated artefact were all located on crests of spur ridgelines. The three identified PADs were all situated in close association (80-100 m) with Tantawangalo Creek.

Dibden (2005a) conducted a survey in relation to a proposed subdivision on the northeastern fringe of the township of Bega, adjacent to the Bega River. The area measured approximately 13 hectares. Two sites, each comprised of a single stone artefact, were identified. Based on the results of the field survey and a consideration of high levels of prior disturbance and geomorphology, the area was assessed to be low archaeological sensitivity.
Dibden (2005b) conducted a survey of a subdivision proposal at South Bega. Ten locales containing Aboriginal objects were recorded during the study. Generally ground exposure was low within the study area due to a thick ground cover of kikuyu. Given the low effective survey coverage achieved the survey results were not considered to be an accurate reflection of the archaeological status of the area.

A subsequent program of test excavation was carried out at the site resulting in the identification of a widespread yet variable density distribution of stone artefacts situated in a subsurface context (Dibden 2006). The majority of Survey Units were found to possess artefacts in either very low or low densities. However, a number of Survey Units possess relatively higher artefact densities which ranged from low/moderate to moderate. This result suggested a relatively higher level of occupation in these locales and that they were focal areas of activity. Given the absence of Survey Units with high artefact densities it was concluded that the proposal area was not utilised for intensive Aboriginal occupation. The artefact density figures suggest that the area was probably utilised sporadically for activities including hunting and gathering and movement through country.

The lithic assemblage was found to exhibit low levels of artefact variability and technical diversity (Dibden 2006). A limited range of artefact types were retrieved and this in conjunction with generally low artefact densities, was interpreted to reflect a correspondingly limited range of behavioural activities that were undertaken in the proposal area. However the presence of numerous collections of related artefacts produced during single knapping events indicated that generally, post-depositional processes, including those related to European farming practices had had a negligible impact on the spatial integrity of the archaeological resource. Many of the identified knapping events possessed retouched microliths with or without usewear and one included an unretouched flake with usewear.

Considerable variability in artefact density was identified between individual Survey Units across the South Bega area. Artefact densities ranged from very low to moderate. No Survey Units possessed high artefact densities however a number of Survey Units possessed relatively higher artefact densities which range from low/moderate to moderate. The variability in artefact density between different Survey Units suggested differential patterns of landuse which related at least in part to environmental parameters. At South Bega the Survey Units which contained either low/moderate or moderate artefact densities were all situated in close proximity (within 200 m) to drainage lines and were usually located at the confluence of two creeks; they were of low gradient (<5-6º) and orientated to either the north or east cardinal points. Survey Units such as high ridge crests located away from creek lines, and hence comparable landforms to those in the current study area, were found to contain either very low or low artefact densities (see Dibden 2006a: Figure 6).

Dibden (2010) conducted subsurface test excavation at the proposed Bega Bypass. The proposal area was found to contain stone artefacts in a subsurface context in all areas tested. Artefact density in the test areas is either very low or low. The results compare with test excavation conducted at South Bega where comparable landforms, that is, high ridge crests located away from creek lines, were also found to contain very low or low density artefact distributions (cf. Dibden 2006b). Accordingly the test excavation results were considered to be robust and an accurate reflection of the nature of the archaeological resource in the proposal area.

3.1.2 Archaeological Potential of the Study Area

The literature review presented above indicates that in Bega Valley, stone artefacts are the most commonly recorded Aboriginal objects. Ceremonial places, human burials and scarred trees are also
recorded, albeit in lower numbers. Based on the review of prior research conducted in the Bega area the following site predictions are made:

**Stone artefacts** are located either on the ground surface and/or in subsurface contexts. The raw materials used for artefact manufacture in the local area will include silcrete, quartz, chert and volcanics. Within the local area stone artefacts will be widely distributed across the landscape in a virtual continuum, but with significant variations in density in relation to different environmental factors. Artefact density and site complexity will be greater on elevated flat landforms near to a source of reliable water.

Given the environmental and geomorphological context it is predicted that archaeological evidence in the form of stone artefacts in the proposal area will be variable. Simple slopes are likely to contain very low or low artefact density while flatter, elevated landforms could contain moderate to even high artefact density.

**Grinding grooves** are found in rock surfaces and result from the manufacture and maintenance of ground edge tools. Given the absence of sandstone exposures in the study area grinding groove sites are unlikely to be present.

**Burial sites** have been recorded within the wider region. The potential exists for burials to be present in deep sedimentary features adjacent to the river. This site type is rarely located during field survey. Given the topographic and geomorphological context burials are unlikely to be present in the proposed impact area.

**Rock shelters sites** are unlikely to be present in the study area given the absence of vertical stone outcrops.

**Scarred and Carved trees** result from either domestic or ceremonial bark removal. Carved trees associated with burial grounds and other ceremonial places have been recorded in the wider region. In an Aboriginal land use context this site type would most likely have been situated on flat or low gradient landforms in areas suitable for either habitation and/or ceremonial purposes.

Bark removal by European people through the entire historic period, and by natural processes such as fire blistering and branch fall, make the identification of scarring from a causal point of view very difficult. Accordingly, given the propensity for trees to bear scarring from natural causes their positive identification is impossible unless culturally specific variables such as stone hatchet cut marks or incised designs are evident, and rigorous criteria in regard to tree species/age/size and it specific characteristics in regard to regrowth is adopted.

 Nevertheless, the likelihood of trees bearing cultural scarring remaining extant and in situ is low given events such as land clearance and bushfires. Generally scarred trees will only survive if they have been carefully protected (such as the trees associated with Yuranigh’s grave at Molong where successive generations of European landholders have actively cared for them).

The study area has been extensively cleared. This site type is unlikely to be recorded in the study area.

**Ceremonial Places and Sacred Geography** Burbung and ceremonial sites are places which were used for ritual and ceremonial purposes. Possibly the most significant ceremonial practices known were those
which were concerned with initiation and other rites of passage such as those associated with death. Sites associated with these ceremonies are burbung grounds and burial sites. Additionally, secret rituals were undertaken by individuals such as clever men. These rituals were commonly undertaken in ‘natural’ locations such as water holes.

In addition to site specific types and locales, Aboriginal people invested the landscape with meaning and significance; this is commonly referred to as a sacred geography. Natural features are those physical places which are intimately associated with spirits or the dwelling/activity places of certain mythical beings (cf. Knight 2001; Boot 2002). Boot (2002) refers to the sacred and secular meaning of landscape to Aboriginal people which has ‘... legitimated their occupation as the guardians of the places created by their spiritual ancestors’.

Knight’s (2001) Masters research conducted in the area of the Weddin Mountains examined the cultural construction and social practice of inhabiting a sacred landscape. This approach is a departure from a consideration of the land and its resources as being a determinant of behaviour, to one in which land is regarded as a text; – within this conception, land and its individual features, are redolent with meanings and significances which are religiously and ritually centred, rather than economically based.

Knight’s (cf. 2001:1) work was possible in great measure by the historical record which explicitly defines Weddin as a site of ritual significance. However, the research was additionally driven by a theoretical approach to ‘cultural landscapes’. Landscape is redefined away from considerations of its material features which provide a backdrop to human activity, towards a view that a landscape is rather, a conceptual entity. According to this view the natural world does not exist outside of its conceptual or cognitive apprehension. The landscape becomes known within a naming process or narrative; thus the landscape is brought into being and understanding – within this process: - ‘... explanatory parables...’ such as legends and mythology are the embodiment of the landscape narrative (Knight 2001: 6).

These narratives are relative to a particular culture, and it is this which makes an archaeological investigation of the cultural landscape such a thorny one. At distance in time and cultural geography, and especially in the absence of specific ethnographic information, how can the archaeologist attempt to investigate and know these narratives? Knight (2001: 11) employed the concept of the landscape as mentifact, whereby archaeological interpretation is concerned with the reconstruction of the landscape as a reflection of prehistoric cosmologies. He argued that this can be reconstructed by exploring the systematic relationships between sites and their topographic setting. This is defined as an inherent approach as it is concerned with the role of landscape in both everyday and sacred life. This view is concerned with an integration of the sacred and profane rather than their existence as separate categories of social life: - where “Cult activity may have existed as an inextricably ‘embedded’ component of daily life, where significant locations and ritual aspects of material culture were thoroughly incorporated into secular ranges and uses” (Knight 2001:13). In this regard Knight (2001: 14) correctly points out that no dichotomy between the material and ideational world existed within Aboriginal life.

Knight (2001: 15) argued that the notion of sacred space is of central concern within an inherent perspective on interpreting cultural landscape. Within human cosmologies locales within the landscape are constructed as being sacred space; this process of the construction of sacred space has been termed hierophany by Eliade (1961 in Knight 2001: 15). However, while Knight (2001: 15) suggests that physical entities such as stones, trees, or topographic features such as mountains, caves and rocky outcrops may be subject to such processes of transformation or construction, in reality in Aboriginal society any natural feature of less obvious significance can and should be included within this listing. Aboriginal
constructions of heirophany can include the most insignificant landscape features and objects of less fixed temporal existence such as animals and plants. While the outside observer readily ‘sees’ and apprehends mountains and rocky features, more subtle elements of the natural world are easily passed ‘unseen’. This point is one which suggests that the personal cultural geography of the archaeologist can severely impact upon the interpretation of the sacred landscape (cf. also, Boot 2002: 288). Knight (2001) does acknowledge this to some extent illustrating the issue by referring to the example of “Jump Up Rock” situated north of Weddin. This place is only understood to have been an important landscape feature by recourse to prior knowledge regarding the meaning of the site name; the hill itself is insignificant and therefore not readily apprehended through an outsiders gaze as being of special significance.

Knight (2001: 16) refers to the issue of peculiarities of form (e.g. shape, colour, size or texture) and natural distinctiveness (e.g. isolated mountains or rocky features within a plains context) as being an important distinguishing feature of sacred locales. Knight (2001: 16) argues that the construction of sacred space in such a manner is particularly relevant to people for whom the natural domain is the dwelling place of/or the manifestation of their deities. Knight (2001: 16) again draws from Eliade (1964) to suggest that it is at the sacred place that the three fundamental cosmological worlds, the everyday, the upper and underworld may converge; typically the upper world will be associated as a point of ‘access’ with tall things such as trees while the underworld will be associated with pools and caves. Eliade contends that places where all three worlds can possibly connect, the axis mundi, are of a heightened order of sacredness. Hierophanies are therefore natural features which are ascribed sacredness. Additionally, Knight (2001: 17) refers to their ability to provide a landscape based opportunity for people to commune with other worldly deities and associated power because they may constitute spatial access between worlds via ritual.

Guided by these theoretical considerations Knight (2001: 20) engaged with Bradley’s (cited in Knight 2001) model of the ‘archaeology of natural places’ in order to provide guidance for investigating the cultural landscape. In this view, natural places can be explored archaeologically in order to determine the nature of their role in human cosmologies by attending to four archaeological categories: - Votive offerings, rock art, production sites and monuments. This model was developed within a European context, with its attendant biases of concepts and archaeological categories; clearly not all concepts, some of which are clearly Eurocentric, will be applicable in Australia. Nor will all these data sets be found within the Australian context.

Knight (2001) gives consideration to the types of natural places which might be ascribed sacred significance. These include mountains, woodlands and groves, springs, pools and lagoons, rock outcrops and caves and sinkholes. He argues that Aboriginal cosmology is expressed via the natural landscape and sacred places were those which were directly related to the Dreaming. He says that these sacred sites typically are those which are remarkable or important physiographically such as caves, rocks and so on.

Given the potential for natural features to have been important places within an Aboriginal cosmological frame of reference, the survey has sought to identify outstanding natural features present in the study area. The landscape of the entire subject area does not possess any landform elements that stand out as unusual or significant. While many places on the South Coast are known in respect of their sacredness, none of these located within or near to the subject area.

Contact sites are those which contain evidence of Aboriginal occupation during the period of early European occupation in a local area. Evidence of this period of ‘contact’ could potentially be Aboriginal
flaked glass, burials with historic grave goods or markers, and debris from ‘fringe camps’ where Aborigines who were employed by, or traded with the white community may have lived or camped. The most likely location for contact period occupation sites would be camp sites adjacent to permanent water, and located in relative proximity to centres of European occupation such as towns and homesteads. The potential for such sites to be present in the proposal area is unlikely.

3.2 AHIMS Search

A search of the NSW OEH Aboriginal Heritage Management Information System (AHIMS) has been conducted for this project on the 12 April 2013 (Client Service ID: 94804). A total of 14 Aboriginal sites are listed. The full AHIMS site search is included as Appendix 2.

It is apparent that the AHIMS search contains certain inaccuracies. A number of sites are recordings made on Polacks Flat Road, which extends to the north of the highway from an area to the east of the bridge. They have inaccurate grid references and plot off the road. One of these plots on the Snowy Mountains Highway east of the bridge and within the area of proposed works. This site (AHIMS #62-6-410) is, however, located approximately 200 metres to the north of the highway on Polacks Flat Road (see sketch maps on site card in Appendix 3).

None of the listed AHIMS sites occur in the proposed impact area. The AHIMS register only includes sites which have been reported to NSW OEH. Accordingly, this search cannot be considered to be an actual or exhaustive inventory of Aboriginal object sites situated within the local area. Generally, sites are only recorded during targeted surveys undertaken in either development or research contexts. It is possible that additional Aboriginal objects are likely to be present within the search area, but that to date, they have not been recorded and/or reported to NSW OEH.

Searches have been conducted of the NSW State Heritage Inventory and the Australian Heritage Database. No Aboriginal heritage sites are listed on these as being in the subject area.
4. LANDSCAPE CONTEXT

Aboriginal people have occupied NSW for more than 42,000 years (Bowler et al. 2003); evidence and cultural meanings relating to occupation are present throughout the landscape (NSW OEH 2011: iii).

A consideration of landscape is particularly valuable in archaeological modelling for the purposes of characterising and predicting the nature of Aboriginal occupation across the land. In Aboriginal society, landscape could be both the embodiment of Ancestral Beings and the basis of a social geography and economic and technological endeavour. The various features and elements of the landscape are/were physical places that are known and understood within the context of social and cultural practice.

Given that the natural resources that Aboriginal people harvested and utilised were not evenly distributed across landscapes, Aboriginal occupation and the archaeological manifestations of that occupation will not be uniform across space. Therefore, the examination of environmental context is valuable for predicting the type and nature of archaeological sites which might be expected to occur. Factors that typically inform the archaeological potential of landscape features include the presence or absence of water, animal and plant foods, stone and other resources, the nature of the terrain and the cultural meaning associated with a place.

Additionally, geomorphological and humanly activated processes need to be defined as these will influence the degree to which archaeological sites may be visible and/or conserved. Land which is heavily grassed and geomorphologically stable will prevent the detection of archaeological material, while places which have suffered disturbance may no longer retain artefacts or stratified deposits. A consideration of such factors is necessary in assessing site significance and formulating mitigation and management recommendations.

4.1 Landscape of the Study Area

The following information describes the landscape context of the subject area.

The topographic context is shown on Figure 1. The area is on the Bemboka 8824-4S 3rd ed. 1:25,000 topographic map. For mapping purposes it is located in Zone 55. The area is in the Bega Valley.

Moran’s Crossing on the Bemboka River is located on the Snowy Mountains Highway, 8.6 km east of Bemboka and 26.9 km west of Bega. The area is within the coastal lowlands system consisting of rolling to undulating terrain (Gunn et al. 1978). The Bemboka River drains from the South East Forests escarpment and flows in a northwest/southeast direction until it flows into the Bega River near Kameruka. The typical topography consists undulating spur crests, simple slopes and open depressions.

The proposal area is situated on early Devonian granite of the Bega formation (Monaro 1:500,000 geological map sheet). Granite outcrops intermittently in the wider area as low (<1 m high) boulders. The soil is derived from granite and is a gravely loam.

The Bega district was first explored by Europeans in the late 1820s, with settlement commencing in the 1830s. Initially, land clearance within the Bega Valley was restricted to the alluvial flats centred around the present township site, which were used for sheep grazing, cropping and subsistence farming (Brooks and Brierley 1997). By 1851, large squattages had been staked out in the lowland area of the Bega Valley, but there had been little European impact to the broader catchment at this time. However, when
the Robertson Land Acts were passed in 1861 the European population of Bega and the surrounding district swelled dramatically. The former large squattages were carved up into smaller acreages and dairying became the principal land use. In addition, a forestry industry supplying timber to Sydney was well established by the 1860s. Following the initial clearance of lowland forests, extensive recolonisation by various wattles species gave rise to wattle bark stripping for tanning, which also became an important commercial enterprise in the area from the 1860s (Brooks and Brierley 1997). By the 1870 -1880s almost 70% of the Bega catchment (including the study area) was cleared of its cover of tall open eucalypt forest.

As a result of this extensive clearance of the catchment, and the floodplain and channel-margin vegetation, as well as the drainage of upland swamps, ploughing of alluvial flats and the construction of tracks and roads, valley fill sediment stores were unlocked and large volumes of sediment were conveyed to the lower catchment (Scott 1999). In consequence, the hydrologic and sediment regime of the Bega River was critically altered and the river landscape transformed. The lower Bega River experienced massive increase in channel width. Between 1851 and 1896, this channel width had expanded from an average of 40 metres wide to 150 metres across, with pools along the lowland plain infilled with the large quantities of sediment flushed downstream from the upper catchment and up to 2 metres of coarse sand deposited over the floodplains which were previously comprised of fine silt (Brooks and Brierley 1997). That is, soils and gravels from upland areas, such as the study area, were transported downstream into the lower catchment.

Within the context of this general pattern of European occupation, the study area has been extensively cleared and sown with introduced pasture.

The climate of the study area is mild, with rainfall and temperatures peaking in the summer months. The prevailing winds are north-easterly in summer and south-westerly in winter.

4.2 Landuse in the Study Area

The local area in which the proposal site is situated, is likely to have provided Aboriginal land users with a variety of resource zones including the river and forest. Elevated, relatively flat landforms situated in close proximity to the river are likely to have been used for camping associated with the exploitation of these resource zones. It is predicted that such areas are likely to have been focal landforms for occupation within the broader landscape. Such activity will have resulted in the discard of relatively higher densities of artefacts. Landforms situated away from the river would contain low densities of artefacts reflecting sporadic activities.
5. ARCHAEOLOGICAL SURVEY

5.1 Field Inspection – Methods

The field inspection was carried out on the 11th April 2013 in the company of Ms Agnes Donovan, RMS. and Ron Thomas, Bega Local Aboriginal Land Council. The methodology for the field survey entailed a pedestrian traverse of the subject area. The field survey was focused specifically at locating Aboriginal objects. An assessment was also made of prior land disturbance, survey coverage variables (ground exposure and archaeological visibility) and the potential archaeological sensitivity of the land. The data collected forms the basis for the documentation of survey results outlined in the section below.

5.2 Field Inspection – Results

No Aboriginal objects were recorded and the entire proposed impact area was assessed to be of very low to negligible archaeological potential and sensitivity. The survey encompassed the entire subject area (see Figure 1).

The Aboriginal stakeholder cultural heritage survey report is attached as Appendix 3. The report confirms that no Aboriginal features were identified and that, therefore, there were no likely impacts to Aboriginal heritage. However, the report does indicate that some features may be present.

The survey conditions are described below:

East of river – The entire area in which works are proposed on the east side of the river is highly disturbed. The highway has been formed by significant cut and benching (see for example Plates 4 and 5). The area on the south side of the road which is currently used for materials storage (see Plate 1) is a large, significantly modified landform. Closer to the bridge, the land surface is modified for drainage works and highly disturbed by previous bridge construction works (Plate 6). At and within the river channel itself, fluvial processes have created a scoured out and eroded landform. No areas of archaeological potential were identified in the survey area on the east side of the bridge.

Plate 4 The east end of proposed works; looking west.
Plate 5 Example of benching on which the highway is built on the south side of road (left in photo) looking 240°; note turnoff into Polacks Flat Road where figures are standing on right, and cutting beyond.

Plate 6 Looking across the river to the east side of the bridge; looking 90°.

West of river – While significant prior disturbance has also occurred in places on the west side of the bridge, some areas in which works would occur are relatively undisturbed. The western section of the road is on a built up platform in a wide drainage line which is assessed to be of negligible archaeological potential (Plate 7). A significant area of the existing deep cutting would be widened on the south side of the road. This widening would remove part of a landform which is relatively undisturbed. Visibility was very low on this landform, however, it is assessed to be of low archaeological potential. The remainder of the area between the cutting and the bridge where impacts would occur, is a generally low lying, highly disturbed flat, assessed to be of low archaeological potential. No areas of archaeological potential were identified in the survey area on the west side of the bridge.
Plate 7 The western end of the proposed works on a built up platform, looking 60° towards the cutting which would be widened on the southern side of the road.

Plate 8 The cutting which would be widened on its south side; looking 60°.
Plate 9 The area located immediately west of the bridge on the south side of the road; looking 120°.
6. STATUTORY INFORMATION

The National Parks and Wildlife Act 1974 (NPW Act) is the primary legislation for the protection of some aspects of Aboriginal cultural heritage in NSW. One of the objectives of the NPW Act is:

... the conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including but not limited to: (i) places, objects and features of significance to Aboriginal people ... (s.2A(1)(b))

The NPW Act provides statutory protection for all Aboriginal objects and Aboriginal Places.

An ‘Aboriginal object’ is defined as:

... any deposit, object or material evidence (not being a handicraft for sale) relating to Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

An Aboriginal place is an area declared by the Minister to be an Aboriginal place for the purposes of the Act (s84), being a place that in the opinion of the Minister is or was of special significance with respect to Aboriginal culture.

Part 6 of the NPW Act is administered by the NSW Office of Environment and Heritage (NSW OEH) and provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean destroying, defacing or damaging an Aboriginal object or declared Aboriginal place, or moving an object from the land. There are a number of defences and exemptions to the offence of harming an Aboriginal object or place. One of the defences is that the harm is carried out under an Aboriginal Heritage Impact Permit (AHIP). Section 86 of the NPW Act, Harming or desecrating Aboriginal objects and Aboriginal places, sets out the penalties for harming an Aboriginal object.

Anyone proposing to carry out an activity that may harm an Aboriginal object or declared Aboriginal place must investigate, assess and report on harm that may be caused by the activity they propose. An Aboriginal Heritage Impact Permit (AHIP) may be required if harm to Aboriginal objects and declared Aboriginal places is proposed. When this is the case, an Aboriginal Cultural Heritage Assessment Report (ACHAR) is required to support the AHIP application.

In the case at hand, no Aboriginal objects or places have been identified in the subject area. Accordingly, an AHIP is not required.
7. RECOMMENDATIONS

The recommendations are made on the basis of:

- The recommendations as set out in the Aboriginal stakeholder cultural heritage survey report.
- A consideration of the relevant legislation (see, Section 6 Statutory Information).
- The results of the investigation as documented in this report.
- Consideration of the nature of proposed impacts.

The following recommendations are made:

1. No further archaeological investigations are required in respect of the proposal. No areas were identified that could be characterised as places with a high probability of possessing subsurface Aboriginal objects with high potential conservation value. Accordingly, archaeological test excavation has not been undertaken in respect of the proposal as it could not be justified (cf. NSW DECCW 2010: 24).

2. No Aboriginal objects or places have been recorded in the subject area. An Aboriginal Heritage Impact Permit is not required for the proposed works.

3. There are no Aboriginal archaeological constraints to the proposed works.

4. Should an unexpected find be indentified during construction, all works in the vicinity of the find must cease and the RMS ‘unexpected archeological finds procedure’ must be followed.
8. REFERENCES


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Saunders, P. 1997 Archaeological Survey for Aboriginal Sites at Two Proposed Gravel Extraction Locations in the Bega District, NSW. A report to Nexus Environmental.


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APPENDIX 1 GLOSSARY

**Aboriginal object** - A statutory term, meaning ‘... any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains’ (s.5 NPW Act).

**Declared Aboriginal place** - A statutory term, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

**Development area** - Area proposed to be impacted as part of a specified activity or development proposal.

**Harm** - A statutory term meaning ‘... any act or omission that destroys, defaces, damages an object or place or, in relation to an object – moves the object from the land on which it had been situated’ (s.5 NPW Act).

**Place** - An area of cultural value to Aboriginal people in the area (whether or not it is an Aboriginal place declared under s.84 of the Act).

**Proponent** - A person proposing an activity that may harm Aboriginal objects or declared Aboriginal places and who may apply for an AHIP under the NPW Act.

**Proposed activity** - The activity or works being proposed.

**Subject area** - The area that is the subject of archaeological investigation. Ordinarily this would include the area that is being considered for development approval, inclusive of the proposed development footprint and all associated land parcels. To avoid doubt, the subject area should be determined and presented on a project-by-project basis. In this instance, the subject area refers to the areas in which impacts would occur which are on either end of the bridge.
APPENDIX 2 AHIMS SITE SEARCH

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

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<td>0</td>
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AHIMS Web Service search for the following area at Lat, Long From: -36.6779, 149.6254 - Lat, Long To: -36.6494, 149.6706 with a Buffer of 50 meters. Additional Info: For use in design conducted by Kurt Bridde on 12 March 2013.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

Bemboka River Bridge Project Aboriginal Cultural Heritage Assessment Report

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## Extensive search - Site list report

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Contact: Sarale

Recorded: Environmental Resources Management Australia

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