3. Physical Setting

3.1 Topography and Hydrology

Review of the local topographic mapping and site observations indicated that site is generally sloping down to the south. Surface levels within the site range between approximately RL 23.5 m AHD in the north east and RL 7 m AHD in the south. Karignan Creek borders the southern boundary of the site which discharges to the west and then north-west into Lake Macquarie, located approximately 1,100 m to the north-west.

Surface water would generally be expected to infiltrate at the site, however, runoff from the site is generally expected to migrate to the south, possibly entering the on-site dam or discharging into Karignan Creek. The final discharge point would most likely be Karignan Creek and Lake Macquarie.

Figure 3 is a plan of the local area and shows the site in relation to surface elevation contours and local watercourses.

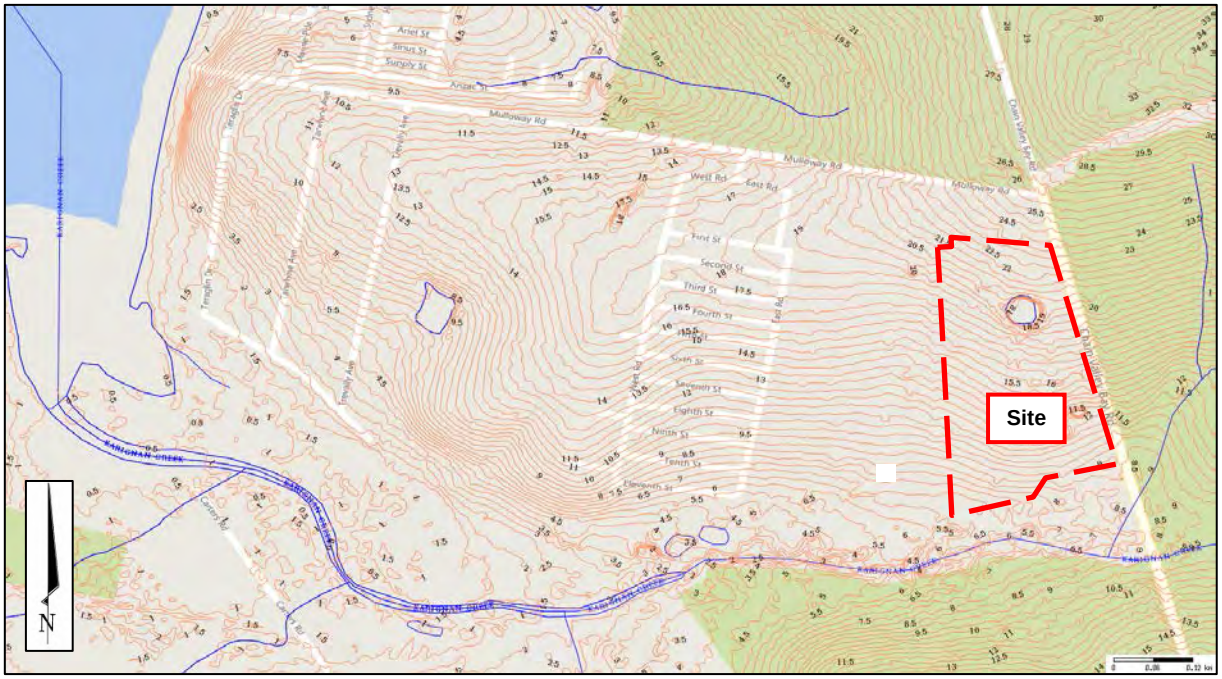


Figure 3: Site Topography
(image sourced from Microsoft Virtual Earth with NSW Contours Hunter and Central Coast Lidar, 0.5 m, overlay)

3.2 Adjacent Site Uses

Surrounding land uses include the following:

- North (up slope) – Existing residential development, Mulloway Road and then undeveloped land;
- East (across and down slope) – Chain Valley Bay Road and then undeveloped land;
- South (down slope) – Karignan Creek and then undeveloped land; and
- West (across and downslope) – Residential properties (Valhalla Village).

The potential for contamination from existing off-site land uses or activities to have impacted the site is considered to be relatively low.

A walkover of the adjacent sites was not undertaken as part of this PSI.

3.3 Regional Geology and Soil Landscape

Reference to the local geological mapping indicates that the site is mapped as being underlain by the Munmorah Conglomerate (identified as Rnm in Figure 4), however, the southern boundary borders an area mapped as being underlain by Quaternary alluvium (identified as Qa in Figure 4). Munmorah Conglomerate of the Narrabeen Group typically comprises pebbly sandstone, conglomerate, sandstone and claystone. Quaternary alluvium typically comprises an undifferentiated mix of sands, silts and clays.

The local soil landscape indicates that the site typically comprises erosional soils of the Doyalson (do) landscape, however, the south-eastern corner of the site is mapped as comprising the Tacoma Swamp (ts) landscape and the southern boundary borders and area mapped as alluvial soils of the Wyong (wy) landscape.

The mapping indicates that subsurface conditions over the majority of the site may comprise residual clayey soils underlain by weathered Munmorah Conglomerate bedrock, whilst in the southern portion the residual soils maybe overlain by alluvial soils.

The subsurface conditions within the site are likely to be consistent with the local geological and soil landscape mapping based on local knowledge and observations made during the site walkover.

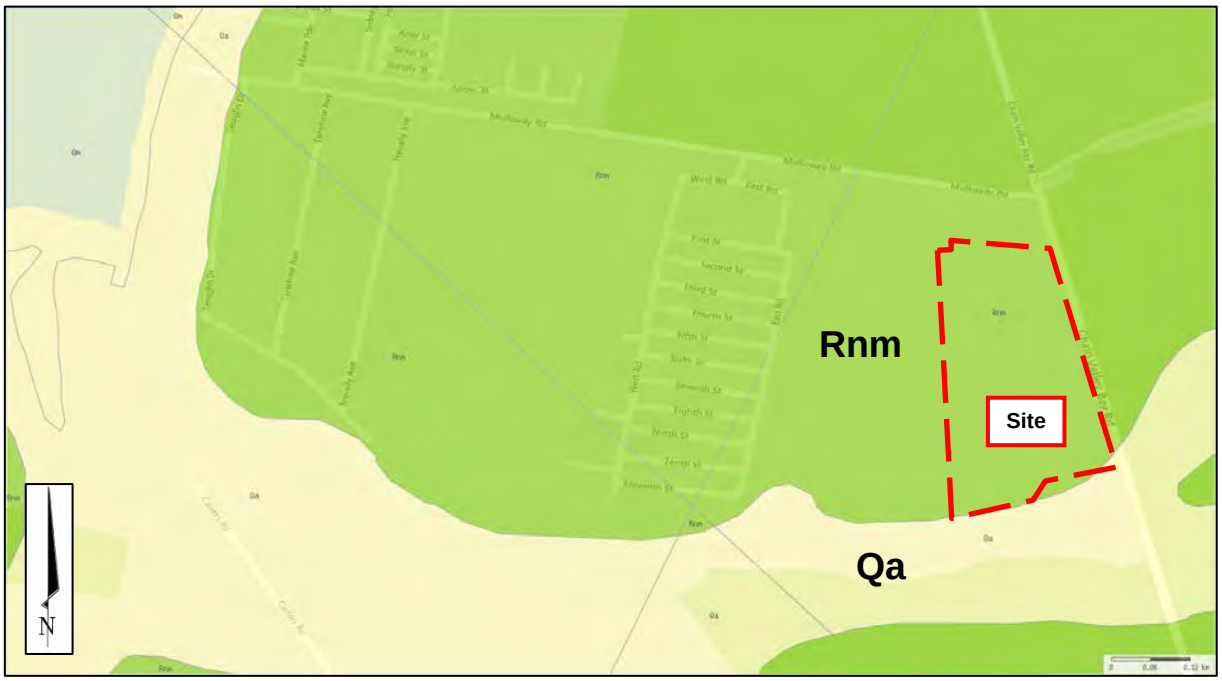


Figure 4: Site Geology Mapping
(image sourced from Microsoft Virtual Earth with Gosford-Lake Macquarie 1:100,000 Geology overlay)

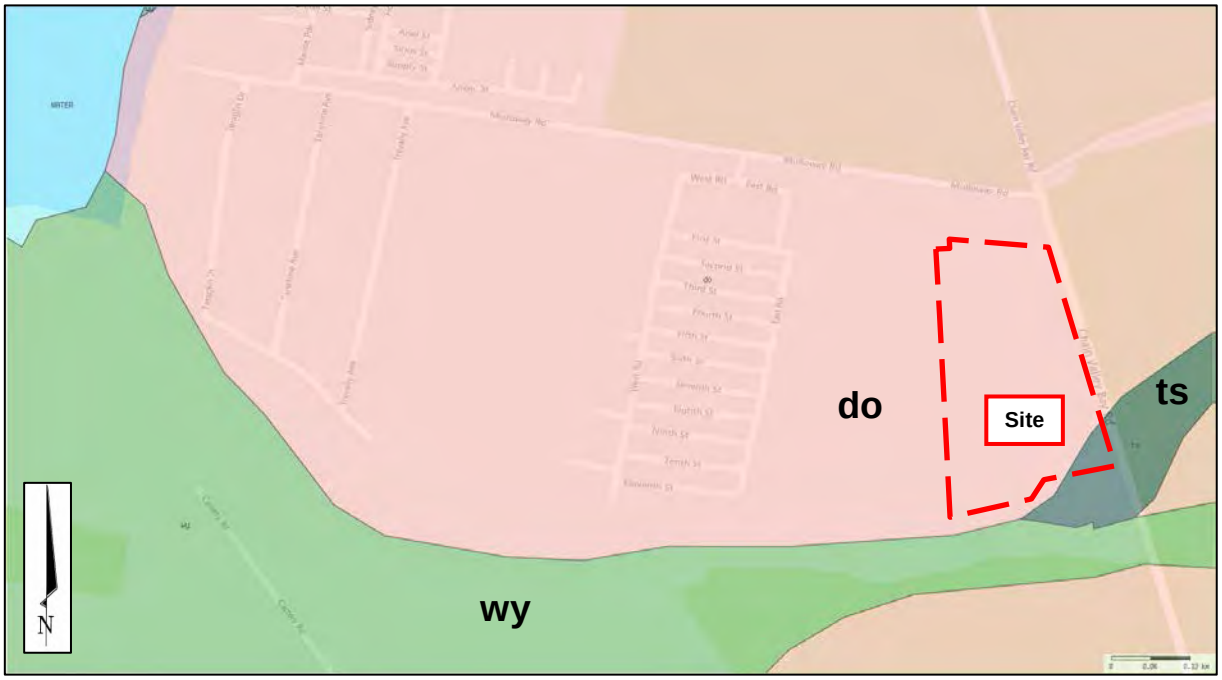


Figure 5: Site Soil Landscape Mapping
(image sourced from Microsoft Virtual Earth with Gosford-Lake Macquarie 1:100,000 Soil Landscapes Sheet overlay)

3.4 Acid Sulfate Soils

The local acid sulfate risk mapping indicates that the site is located in an area mapped as having no known occurrence of acid sulfate soils (ASS). However, the mapping suggests that areas mapped as having a high probably of occurrence within 1 m of the ground surface is located approximately 250 m to the south-west

Furthermore, review of the acid sulfate soils planning maps provided by CCC indicates that the majority of the site is located in Class 5 mapped area and further assessment of acid sulfate soil conditions may be required by council as part of the planning approvals process.

The acid sulfate soil risk mapping is consistent with the mapped subsurface conditions and site elevations indicating that assessment for acid sulfate soil is warranted if soils near the southern boundary are likely to be disturbed as part of the proposed development activities.

It is noted that the possible presence of ASS does not preclude future site development. If ASS are found to be present they can be effectively managed through investigation and a site specific acid sulfate soil management plan (ASSMP).

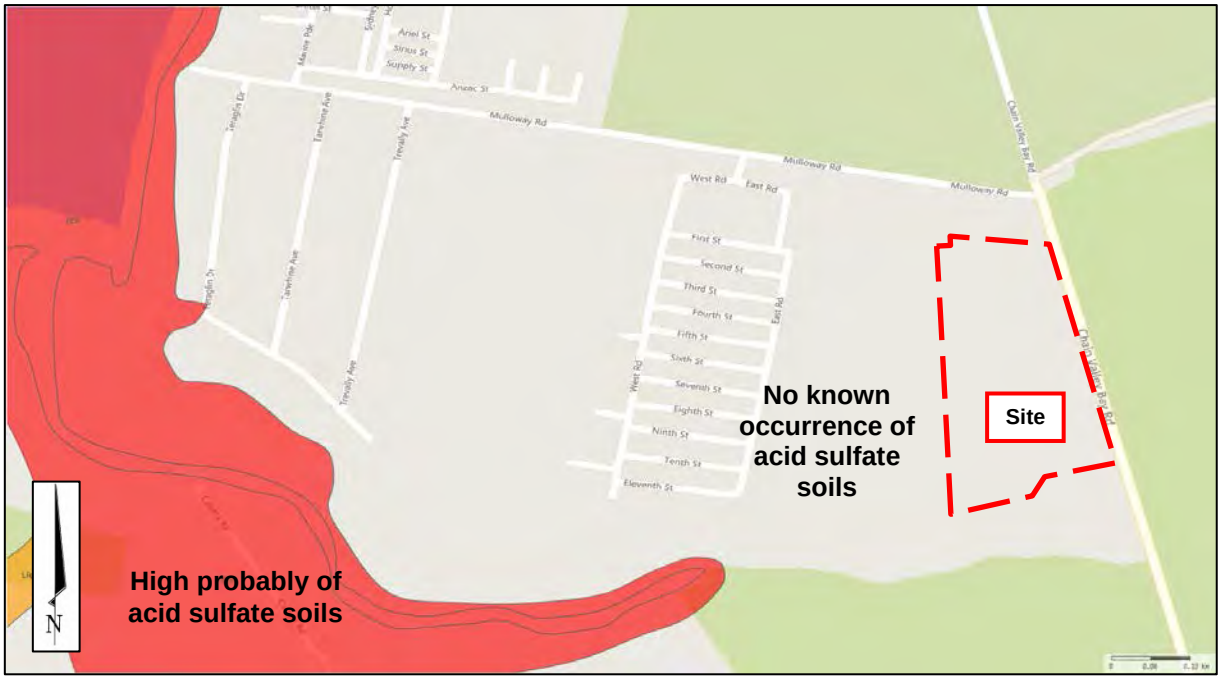


Figure 6: Acid Sulfate Soil
(image sourced from Microsoft Virtual Earth with Gosford-Lake Macquarie 1:100,000 Soil Landscapes Sheet overlay)

3.5 Groundwater

Given the site's topography and geology, it is considered likely that a permanent groundwater table is present at relatively shallow depth (i.e. less than 4 m depth), particularly within the southern portion of the site which borders Karignan Creek. The shallow groundwater table within the northern portion of the site may be limited to intermittent seepage at the interface of permeability boundaries (i.e. sandy – clayey soils or the soil – weathered rock interface) or be present at greater depths within the rock profile. It should be noted that groundwater levels are potentially transient and can be affected by factors such as soil permeability and recent weather conditions.

Figure 7 is a street map of the local area and shows the site in relation to the local registered groundwater bores.

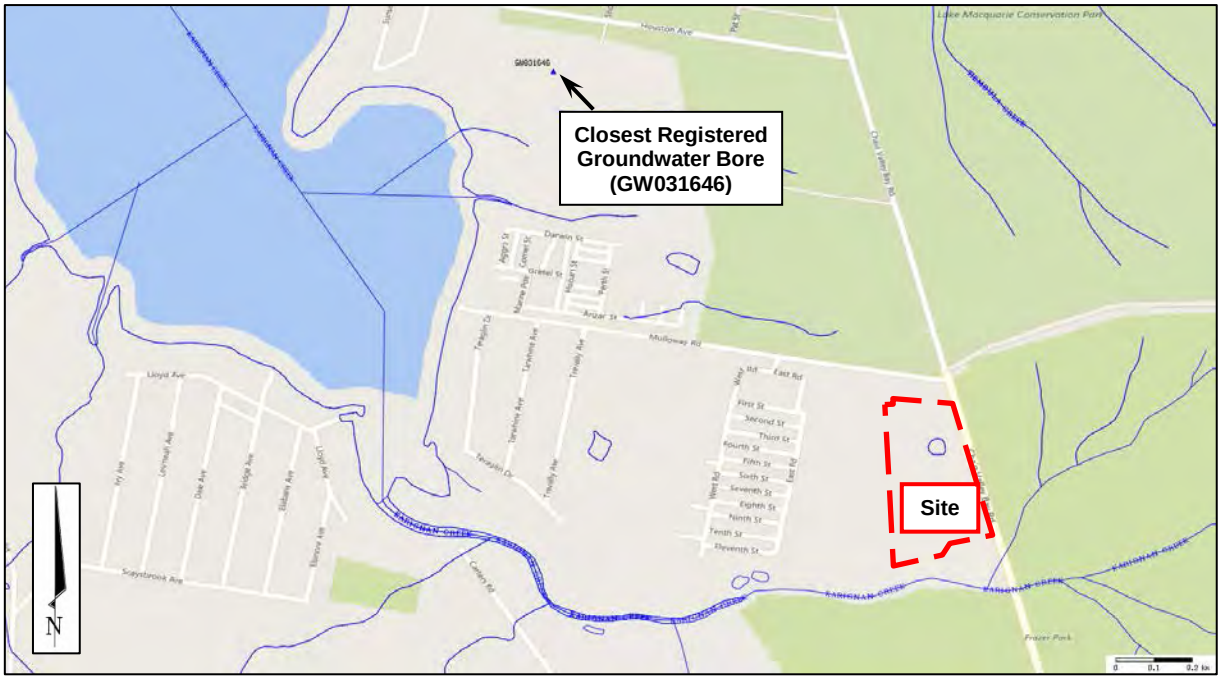


Figure 7: Registered Groundwater Bores
(image sourced from Microsoft Virtual Earth with NSW Office of Water Registered Groundwater Bore location overlay)

A search for registered groundwater bores in the Water NSW groundwater bore database indicated that there are no registered groundwater bores within a 500 m radius of the site. Furthermore, no registered bores were located between the site the Karignan Creek (suspected primary groundwater discharge point).

The information available suggests that the closest bore was installed approximately 1,200 m to the north-west and was installed for coal exploration, however, has a domestic stock authorised purpose. The bore was drilled to 277 m depth, however no well construction details were provided. A copy of the search result is provided in Appendix C. Given the site topography and proximity of watercourse to the south, it is considered unlikely that potential groundwater contamination from the site would impact the nearest registered groundwater bore.

4. Site History

4.1 Regulatory Notices Search

The NSW EPA Register of Contaminated Land was searched for Regulatory Notices that may be current on the site issued under the *Contaminated Land Management (CLM) Act* 1997 and Section 308 of the *Protection of the Environment Operations (POEO) Act* 1997. The information obtained at the time of preparing this report indicated that no current or previous Licences, Notices or Orders were applicable for the site.

4.2 Council Enquiry Information

An enquiry was made to Central Coast Council which identified applications for the following:

- Dwelling and garage in 1989;
- Sign in 2011;
- Shed in 2013 and 2016; and
- Dwelling, pool and deck in 2016.

No other applicable information was obtained from CCC. It is suspected that most of the above applications relate to the northern portion of Lot 5 (which is not part of the current site area), except for possibly the application for a shed in 2016.

4.3 Historical Aerial Photographs

Historical aerial photographs were reviewed dating back to the earliest available record (1954) and approximately every 10 to 20 years thereafter to assess possible changes to the site and surrounding areas during this period. The following historical aerial photographs were reviewed:

- Photograph – Lake Macquarie NSW 8/403 Run 4L, dated 07.03.1954;
- Photograph – Lake Macquarie NSW 2315 24 Run 3, dated 28.05.1975;
- Orthophotomap – Vales Point NSW U4527-9, photograph dated 23.11.1986;
- Photograph – Lake Macquarie NSW 3730 103 Run 9, dated 25.04.1990;
- Photograph – Lake Macquarie NSW 4309 Run 14, dated 29.05.1996;
- Photograph – Google Earth Image, dated 22.04.2005; and
- Photograph – Nearmap Image, dated 22.9.2018.

Extracts of the 1954, 1975, 1990 and 2005 historical aerial photographs / images are included as Drawing 2 in Appendix A. Table 1 summarises the observations made during the aerial photograph review.

Table 1: Aerial Photograph Review

Year	Site	Surrounding Land Use
1954	The site appears to be generally vegetated with bushland, except for access tracks extending from Mulloway Road and Chain Valley Bay. Some disturbance / land clearing is visible within the south-western corner of the site.	Surrounding areas appear to comprise mostly bushland with some cleared areas likely to be vegetated with a grass surface cover. No intensive rural activities (i.e. orchards, market gardens or poultry) were identified on the adjacent properties.
1975	Further clearing apparent in the southern and central areas of the site. A suspected dwelling is also present within the southern area of the site.	No significant changes were observed. Some clearing observed in the western corner of the property adjacent to the northern boundary of the site.
1986	Image only covers northern and western portion of the site and shows the site to be generally in a similar condition to the 1975 photograph. Major changes appear to comprise further clearing and construction of the existing dam at the northern end of the site.	The property to the west appears to have a semi-rural residential use (possibly a grazing use). No other significant changes were observed.
1990	The site generally appears to be in a similar condition to the 1986 photograph, noting that the construction of the dam in the southern area of the site is now visible.	Further clearing in property to the north. No other significant changes were observed.
1996	No significant changes were observed.	Construction of dwelling and shed in the northern portion of Lot 5. No other significant changes were observed.
2005	The site generally appears to be in a similar condition to the 1996 photograph, however, further clearing appears to have been undertaken in the central-western area of the site. Grass covered fill mound also now visible in the southern area of the site.	No significant changes were observed.
2018	Numerous changes / development at the site including: • Storage of caravans, vans and boats within the central-western area of the site with gravel access track; • Stockpiles of filling present across the site; • Shed and filled platform present in southern area of the site; and • Southern dam filled.	Site to the west has been developed for residential use (Valhalla Village) and construction of new shed in property to the north. No other significant changes were observed.

4.4 Other Historical Information

Discussion with the tenant occupying the dwelling in the southern area indicated that the shed development in the southern area of the site is recent and the stockpiles of fill material present surrounding the shed will be removed from the site.

5. Site Walkover / Observations

A site walkover was undertaken on 14 November 2018 by a Senior Environmental Engineer. The site features observed during the walkover are summarised below. The general site topography was consistent with that described in Section 3.1.

The following features were observed during the walkover:

- Existing development at the site comprised a fibro cottage, garage, attached shed and detached colorbond shed in the southern area of the site. It appeared that the cottage was connected to effluent absorption trench that showed signs of possible failure;
- An areas adjacent to the western site boundary was being used primarily for the storage of caravan, campers, trailers and boats.
- Filling appeared to have been carried out in the southern area of the site to provide a level building platform for the colorbond shed;
- Filling has been undertaken to fill the former small dam in the southern area of the site;
- Numerous stockpiles of soils and building waste (metal, tyres, asphalt, PVC and concrete) were present at the site. It is noted that some stockpiles comprised fragments of fibrous cement sheeting, possibly containing asbestos. Possible asbestos containing material (ACM) was also present at the ground surface at some locations, including the filling material placed for the building platform of the shed and in the northern portion of the site;
- Evidence of past stockpiling activities was also observed in the central eastern portion of the site, with minor debris (including concrete and brick fragments) observed at the ground surface;
- An existing dam is located in the northern area of the site, which appears to have been created by cut to fill operations. The dam walls were estimated to be in the order of 2 – 3 m high;
- The site was generally grass covered with some scattered trees. A gravel access track is also present along the western boundary in the northern area of the site;
- The southern area of the site was being used for horse paddocks;
- A timber structure (old farm shed) was located in the north-western corner of the site; and
- Oil containers were present in the shed in the southern area of the site, and were also stacked adjacent to a shed in the adjacent property to the north.

Photoplates showing existing site features are provided in Appendix B.

6. Preliminary Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or in the future i.e. it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

6.1 Potential Contamination Sources and Contaminants of Concern

Table 2 summarises the potential sources of contamination and associated contaminants of concern that have been identified at the site.

Table 2: Potential Contamination Sources and Contaminants of Concern

Potential Contamination Source/Activity	Description of Potential Contaminating Activity	Primary Potential Contaminants of Concern
Importation and placement of contaminated filling	Importation of substantial filling is likely in the southern area of the site based on site history and observations. Localised filling and storage/dumping of materials were observed throughout site.	Various - Common contaminants associated with filling are metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn), TRH, BTEX, PAH, PCB, OCP and asbestos
Storage of equipment, building materials, minor spills/leaks from equipment	Storage and stockpiling of equipment and building materials in numerous locations across the site. Any spills/leaks from equipment are likely to be localised.	Various - Common contaminants associated with filling are metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn), TRH, BTEX, PAH, PCB, phenol, OCP and asbestos
Existing building footprints	Existing development (i.e. fibro cottage and shed) may contain hazardous building materials or have been treated with chemical that could contaminate the soil.	Metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn), OCP and asbestos

Notes:
As = arsenic, Cd = cadmium, Cr = chromium, Cu = copper, Pb = lead, Hg = mercury, Ni = nickel and Zn = zinc
TRH = total recoverable hydrocarbons, BTEX = benzene, toluene, ethylbenzene and xylene, PAH = polycyclic aromatic hydrocarbons, PCB = polychlorinated biphenyls, OCP = organochlorine pesticides

For the purpose of developing a conceptual site model, the potential sources (S) of contamination are summarised as:

- S1 - Importation and placement of contaminated filling;
- S2 - Storage of equipment, materials and spills/leaks; and
- S3 - Existing building footprints.

6.1 Potential Receptors of Concern

The potential receptors of potential contamination sourced from the site are considered to be:

- R1 - Site users (future residential users);
- R2 - Adjacent site users (residential);
- R3 - Construction and maintenance workers;
- R4 - Surface water (nearby watercourse);
- R5 - Terrestrial ecology; and
- R6 - Property (future).

Groundwater is not considered a potential receptor of concern given the potential contamination sources and site conditions identified. This should be reassessed based on the results of future investigations recommended at the site.

6.2 Potential Contamination Migration Pathways

The pathways by which the potential sources of contamination could reach potential receptors are described below:

- P1 - Ingestion and dermal contact;
- P2 - Inhalation of dust and / or vapours;
- P3 - Surface run off; and
- P4 - Direct contact with terrestrial ecology / property.

6.3 Conceptual Site Model

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways. The possible pathways between the above sources (S1 and S2) and receptors (R1 to R6) are provided in Table 3 below.

Table 3: Conceptual Site Model

Potential Source	Pathway	Receptor
S1 – Importation and placement of contaminated filling	P1 – Ingestion and dermal contact	R1 – Site users R3 –Construction & maintenance workers.
S2 - Storage of equipment, materials and spills/leaks	P2 – Inhalation of dust and / or vapours	R1 – Site users R2 – Adjacent site users R3 – Construction & maintenance workers.
S3 - Existing building footprints	P3 – Surface run off	R4 – Surface water.
	P4 – Direct contact with terrestrial ecology / property	R5 – Terrestrial ecology R6 – Property

7. Conclusions and Recommendations

Based on the findings of the desktop review and site walkover, DP considers that the site has been subject to potentially contaminating activities or land uses. Potential contamination sources were identified (refer Table 2 – Section 6); including importation and placement contaminated filling, storage of equipment/materials and the existing buildings.

The site would not be considered compatible (from a site contamination perspective) with the proposed residential land use in its current condition. Further detailed site investigation and potentially remediation and validation works would be required, prior to the site being considered suitable for the proposed residential use.

The preliminary CSM (presented as Table 3) will form the basis for development of a *Sampling and Analysis Quality Plan* (SAQP) prior to the completion of a *Detailed Site Investigation* (DSI).

It is recommended that a combined systematic and judgemental sampling strategy be adopted for a DSI to substantiate DP's assessment of the low to moderate contamination risk at the site. A DSI scope of work could be further developed during the preparation of a Sampling and Analysis Quality Plan with consideration given to the land uses proposed. Furthermore, it is expected that any remedial works are unlikely to prevent redevelopment of the site for the proposed residential uses.

Prior to completion of the further intrusive contamination investigations it is recommended that a licensed contractor is engaged to remove all debris and waste materials and suspected ACM fragments observed at the ground surface.

8. References

1. Department of Urban Affairs and Planning, Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land, 1998.
2. National Environment Protection Council (NEPC), National Environment Protection (Assessment *of Site Contamination) Measure 1999* (amended 2013), 2013.

9. Limitations

Douglas Partners (DP) has prepared this report for this project at Chain Valley Bay in accordance with DP's proposal CCT180390 dated 1 November 2018 and acceptance received from CorVal Partners Ltd dated 1 November 2018. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of CorVal Partners Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

DP's contamination assessment is necessarily based on the result of a desktop site historical search and site inspection only and did not include surface or subsurface sample screening and/or chemical testing. DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site.

It is noted that this assessment does not constitute a hazardous material building assessment. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report. This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Suspected asbestos has been detected by observation on the surface of the site. Building demolition materials, such as concrete were also located in other areas of the site and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos. It is therefore considered possible that HBM, including asbestos, may be present in unobserved parts of the site, and hence no warranty can be given that asbestos is not present.

Douglas Partners Pty Ltd

Appendix A

About This Report

Drawings 1 and 2

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

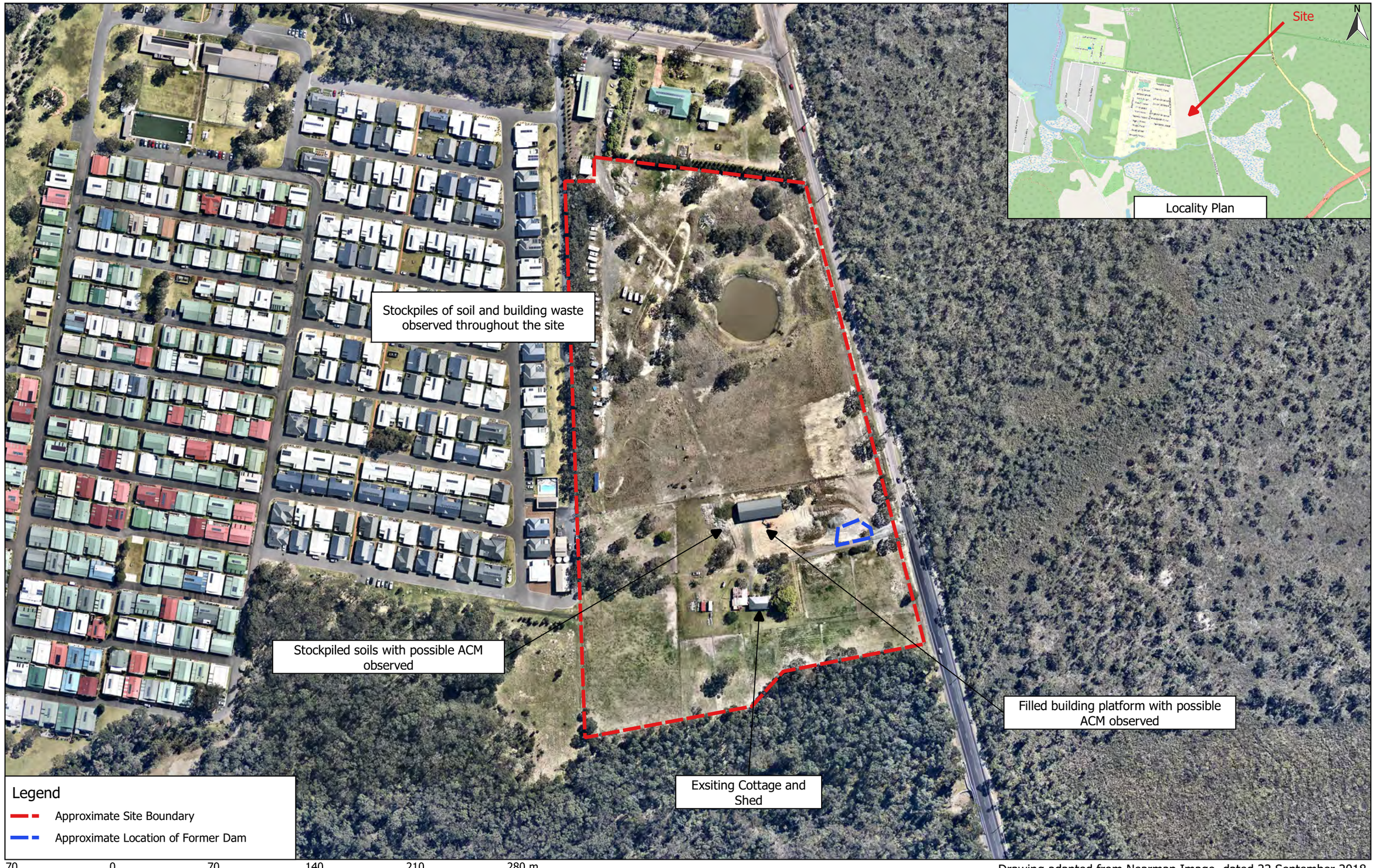
In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.



Drawing adapted from Nearmap Image, dated 22 September 2018

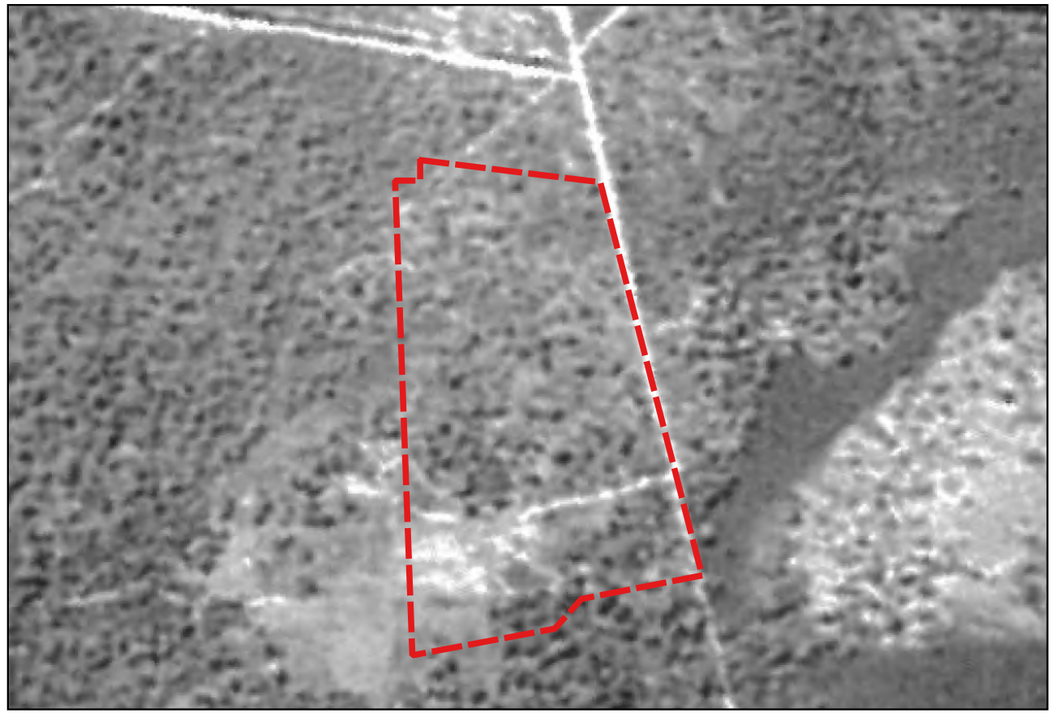
Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT:	CorVal Partners Ltd		
OFFICE:	Central Coast	DRAWN BY:	TDM
SCALE:	1:2500 @ A3	DATE:	26.11.2018

TITLE: **Existing Site Layout**
Proposed Residential Development
45 Mulloway Road, Chain Valley Bay

N

PROJECT No:	83515.01
DRAWING No:	1
REVISION:	0



1954 Aerial

1975 Aerial

1990 Aerial

2005 Aerial

100 0 100 200 300 400 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CorVal Partners Ltd		
OFFICE:	Central Coast	DRAWN BY:	TDM
SCALE:	1:5000 @ A3	DATE:	26.11.2018

TITLE: **Historical Aerial Photographs**
Proposed Residential Development
45 Mulloway Road, Chain Valley Bay

N

PROJECT No:	83515.01
DRAWING No:	2
REVISION:	0

Appendix B

Site Photographs

Photo 1: North-western area of the site, looking southeast

Photo 2: Northern area of the site, looking west

Douglas Partners Geotechnics / Environment / Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	1
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 3: North-eastern corner of the site, looking east

Photo 4: Existing dam, looking north-west

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**		PROJECT:	83444
	Proposed Residential Developm		Plate	2
	45 Mulloway Road, Chain Valley		REV:	A
	Client	Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 5: Stockpiles of soil in northern area of the site

Photo 6: Stockpiles of building waste in northern area of the site

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	3
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 7: Stockpiles of soil in northern area of the site

Photo 8: View of central area of site, looking north

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	4
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 9: View of colorbond shed and stockpiles fill material in southern area of the site

Photo 10: Existing development in southern area of the site, looking east

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**		PROJECT:	83444
	Proposed Residential Developm		Plate	5
	45 Mulloway Road, Chain Valley		REV:	A
	Client	Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 11: Existing development in southern area of the site, looking west

Photo 12: View of south-eastern corner of site, looking east

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	6
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 13: Fill material in southern area of site, looking north

Photo 14: Stockpiles of soil and building waste in southern area of the site

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	7
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 15: Stockpiles of soil and building waste in southern area of the site

Photo 16: Shed with oil containers in property adajcent to northern boundary

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	8
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 17: Fill pad in southern area of site

Photo 18: Scrap metal in northern area of site

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**	PROJECT:	83444
	Proposed Residential Developm	Plate	9
	45 Mulloway Road, Chain Valley	REV:	A
	Client: Corval Partners Pty Ltd	DATE:	27.08.2018

Photo 19: Contents of shed in southern area of the site

Photo 20: Possibkle former poultry shed

Douglas Partners Geotechnics | Environment | Groundwater	**Photoplates**		PROJECT:	83444
	Proposed Residential Developm		Plate	10
	45 Mulloway Road, Chain Valley		REV:	A
	Client	Corval Partners Pty Ltd	DATE:	27.08.2018

Appendix C

Background Information

NSW OFFICE OF WATER
Work Summary

GW031646

Converted From HYDSYS

Licence :20BL024637

Licence Status Active

Work Type : Bore open thru rock
Work Status :(Unknown)
Construct. Method :(Unknown)
Owner Type : Private

Authorised Purpose(s)	**Intended Purpose(s)**
DOMESTIC	COAL EXPLORE
STOCK	

Commenced Date : **Final Depth :** 277.50 m
Completion Date :01-Feb-1960 **Drilled Depth :** 0.00

Contractor Name :
Driller :
Assistant Driller's Name :

Property : - N/A
GWMA :603 - SYDNEY BASIN
GW Zone : -

Standing Water Level :
Salinity : Excellent
Yield :

Site Details

Site Chosen By	**County**	**Parish**	**Portion/Lot DP**
	Form A :NORTHUMBERLAND	WALLARAH	143
	Licensed :NORTHUMBERLAND	WALLARAH	143

Region :20 - HUNTER
River Basin :211 - MACQUARIE - TUGGERAH LAKES
Area / District :

CMA Map :9231-4S CATHERINE HILL BAY
Grid Zone :56/1 **Scale :**1:25,000

Elevation :
Elevation Source :(Unknown)

Northing :6329317 **Latitude (S) :**33° 10' 0"
Easting :366742 **Longitude (E) :**151° 34' 15"

GS Map :0055C1 **MGA Zone :**56 **Coordinate Source :**GD.,ACC.MAP

Construction

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

H	P	Component	Type	From (m)	To (m)	OD (mm)	ID (mm)	Interval	Details
1	1	Casing	(Unknown)	0.00	16.70	76			(Unknown)

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
3.00	10.60	7.60	(Unknown)	3.00		0.13			Excellent

Drillers Log

From (m)	To (m)	Thickness(m)	Drillers Description	Geological Material	Comments

Remarks

***** End of GW031646 *****

05 E – *Social Impact Assessment*

SOCIAL IMPACT ASSESSMENT

45 Mulloway Road, Chain Valley Bay – Planning proposal to permit a manufactured home estate

PR144630
Social Impact Assessment, Mulloway Road, Chain Valley Bay
V2
08 July 2019

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
V1	Draft	A Biller	R Dwyer	R Dwyer	04-07-19
V2	Submission with Planning Proposal	A Biller	R Dwyer	R Dwyer	08-07-19

Approval for issue

R Dwyer		8 July 2019

Prepared by:

RPS

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Contents

Figures

Appendices

1 INTRODUCTION

1.1 Purpose

RPS acts on behalf of Vivacity Property Pty Ltd (herein referred to as "the client") in preparing this social impact assessment (SIA) in support of a planning proposal to rezone land at 45 Mulloway Road Chain Valley Bay (Lot 5 in DP 1228880) from E3 Environmental Management to RE2 Private Recreation pursuant to *Wyong Local Environmental Plan 2013* (WLEP 2013). The likely future use of the land is a Manufactured Home Estate (MHE) for approximately 190 sites. This use will be subject to a separate development application (DA) once the site has been rezoned.

SIA refers to the assessment of the social consequences of a proposed decision or action (development proposals, plans, policies, and projects) namely the impacts on affected groups of people and on their way of life, life chances, health, culture, and capacity to sustain these.

A location plan of the subject site is included at **Figure 1** and a copy of the likely future development footprint is contained at **Appendix A**.

This SIA will form part of a planning proposal package to be presented to Central Coast Council in support of the proposed rezoning.

The purpose of the SIA is to:

- Assist Council and the NSW Department of Planning, Industry and Environment (DPIE) to establish the full facts about the project and to support a well-informed decision about the appropriateness of the proposed development;
- Minimise adverse impacts and maximise beneficial impacts of the proposed development;
- Assess the impacts of the proposed development on future generations; and
- Inform the assessment process.

RPS have recently prepared SIAs in support of the following projects:

- Extension to existing caravan park at Tomago (Port Stephens LGA);
- Manufactured Home Estate (MHE) at Hallidays Point (Mid Coast LGA);
- MHE at Harrington (Mid-Coast LGA).

1.2 Structure

In preparing this SIA, reference has been made to the Draft *Greater Lake Munmorah Structure Plan* dated March 2019 and Central Coast Council's requirements for social impact assessment. The site falls within Precinct 7 of the Draft *Greater Lake Munmorah Structure Plan* and is identified for future low-density residential development.

The format of the SIA is as follows:

- Section 2, Methodology and Local Study Area – describes the methodology of the SIA, site and study area;
- Section 3, Development Overview – describes the specific development proposed;
- Section 4, Community Profile – presents the baseline information including population and housing projections;
- Section 5, Impact Assessment – identifies the likely social and economic impacts of the proposal and cumulative impacts; and

- Section 6, Conclusion – provides the conclusions of the SIA and recommendations for the DA.

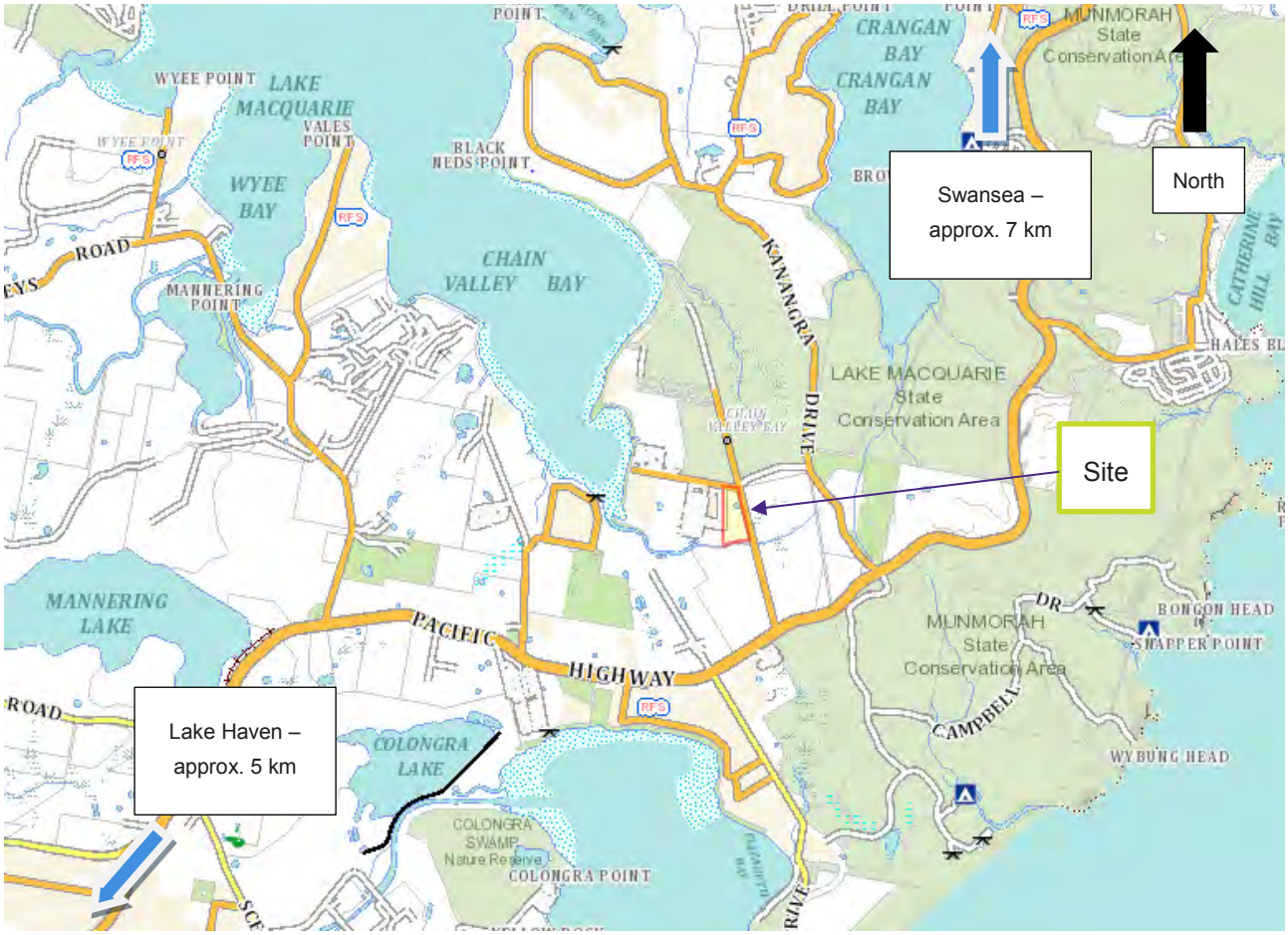


Figure 1 – Location Plan (Source Six Maps)

2 METHODOLOGY

2.1 Study Area

The study area is in the Lake Munmorah – Mannering Park Census area as shown in **Figure 3** on page 12.

2.2 Scope

The site is known as 45 Mulloway Road Chain Valley Bay and is located within the Central Coast local government area (LGA). The assessment addresses the following:

- Social issues including population characteristics; crime; health; community services and facilities; recreation, sport, park and open space;
- Housing;
- Economic issues including recreation, employment and industry;
- Accessibility, and
- The likely social impacts of the proposal.

2.3 Baseline Information

Data about the site, its context and potential impacts has been compiled from a comprehensive desk top study to understand the local community and local issues and predict, analyse and assess the likely impact of future development.

A range of sources have been used for the desk top study as follows:

- Census data from the Australian Bureau of Statistics (ABS);
- Review of relevant Council and Regional strategic documents;
- Bureau of Crime Statistics & Research;
- Demographic and Demand Analysis for Chain Valley Bay prepared for Corval Partners and Vivacity Property dated May 2019; and
- Central Coast Council website.

Study areas for assessment purposes are identified and baseline information described in Section 4.

2.4 Consultation

Central Coast Council have been consulted to determine their requirements for SIA. Council's requirements include typical phases involved in undertaking SIA, and are included at **Appendix D.** The requirements relate more towards SIA which accompany development applications (DAs) rather than rezoning proposals. Notwithstanding this, where relevant, the phases set out in preparing a typical SIA have been incorporated into this document.

2.5 Assessment

The SIA considers potential social and economic impacts on the community (existing and future). It identifies both negative and positive impacts and identifies potential mitigation measures and strategies to minimise negative impacts and maximise positive impacts.

3 DEVELOPMENT OVERVIEW

3.1 The Site

The site is situated within the locality of Chain Valley Bay on the western side of Chain Valley Bay Road approximately 900m north of its intersection with the Pacific Highway. The site has an irregular shape with an area of approximately 10.7ha and a frontage to Chain Valley Road of approximately 520m and Mulloway Road of approximately 145m. The site is predominately cleared of vegetation other than the southern end, and currently accommodates two dwellings close to the intersection of Chain Valley Bay Road and Mulloway Road. The site is currently zoned E3 Environmental Management pursuant to WLEP 2013. A site context plan is included at **Figure 2** below**.**

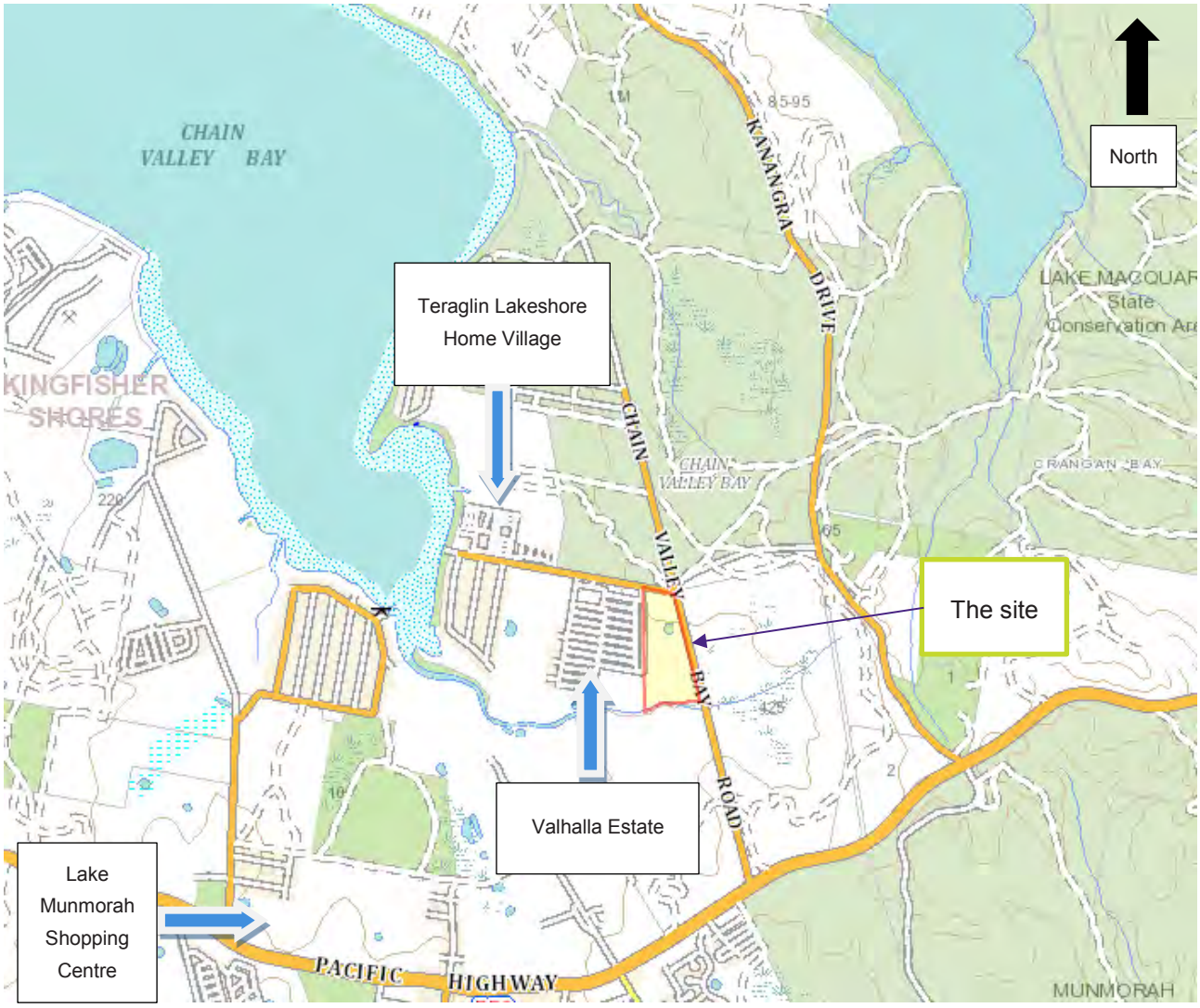


Figure 2 – Context Plan

3.2 The Local Area

Adjoining the site to the west is Valhalla Lifestyle Estate. Further to the west overlooking Chain Valley Bay is an established residential area and Teraglin Lakeshore Home Village. Most services and facilities serving the local area are located within a radius of approximately 2.5km south-west of the site along the Pacific Highway, including Woolworths Lake Munmorah on the corner of the Pacific Highway and Tall Timbers Road. The site is well connected to the local road and highway network giving easy and fast access to the Hunter, Sydney and the Central Coast. In particular, the site is approximately 13km from Swansea to the north east. A site analysis plan is included at **Appendix B.**

3.3 The Proposed Development

This SIA has been prepared in support of a proposal to rezone the site. The likely future use of the land is to be for a MHE for approximately 190 sites. This will be subject to a separate DA once the site has been rezoned.

In summary, the proposed development, as illustrated in **Appendix A**, includes:

- Creation of approximately 190 sites for homes, built on site. The majority of homes will contain two bedrooms with a small proportion containing three bedrooms;
- Each site will be approximately 230 to 280m2 in area. Overall yield will be in the order of 15 dwellings per hectare. It is noted that this yield is consistent with yields anticipated by Council in the R1 General Residential zone and is far less than yields of other more recent estates (where homes are manufactured on site), where yields may be in the order of 20 to 25 dwellings per hectare;
- The proposed homes will be built on site, will be accessible to people with a disability and thus will maximise opportunities for ageing in place. Homes will be built on site thus maximising the opportunity for local job creation during the construction phase;
- Spacious sites will enable front, side and rear setbacks and provision of garages. An area will be set aside for caravan parking / boat storage;
- Master planned landscaping linking green space with desired pedestrian pathways, entry areas and a community facility precinct;
- A community facility precinct including community buildings and pool;
- An access point to the proposed development from Chain Valley Bay Road which will avoid traffic through the surrounding residential areas; and
- Associated utilities to support the above.

4 RELEVANT POLICY DOCUMENTS

4.1.1 Central Coast Regional Plan 2036

The *Central Coast Regional Plan 2036* provides an overarching framework to guide the preparation of detailed land use plans, the determination of development proposals and inform infrastructure funding decisions. By 2036 the region is expected to have 36,350 more households requiring 41,500 new homes.

The likely future use of the land is to be for a manufactured home estate. This will assist to improve housing supply and choice and is consistent with the following Directions within *Central Coast Regional Plan 2036*:

- Direction 19 - Accellerate housing supply and improve housing choice; and
- Direction 21 – provide housing choice to meet community needs.

4.1.2 Greater Lake Munmorah Draft Structure Plan

The Draft *Greater Lake Munmorah Structure Plan* establishes a framework to guide the future sustainable growth of the Lake Munmorah area from approximately 8,500 people to 13,500 people. The site falls within Precinct 7 – Chain Valley Bay and is identified for future low-density residential development. The draft plan identifies actions for the Chain Valley Bay local area including the following:

- Network of shared pathways/footpaths to be incorporated along connector road key desire lines;
- Beautification treatments for Chain Valley Bay Neighbourhood Centre;
- Improve accessibility to Karignan Creek;
- New recreation space to provide recreation opportunities for local community;
- Proposed green drainage corridor to address environmental issues; and
- Establish new conservation management site.

5 COMMUNITY PROFILE AND SOCIAL BASELINE

5.1 Study Area

For the purposes of this SIA, the impacts of the proposed development are addressed using two sets of data (2016 and 2017) identified through the ABS website that correspond to available Census data as follows:

- Australia wide study area; and
- Local Study Area – the Lake Munmorah – Mannering Park Census area as shown in **Figure 3.** This information is used for data comparison purposes and the consideration of community issues.

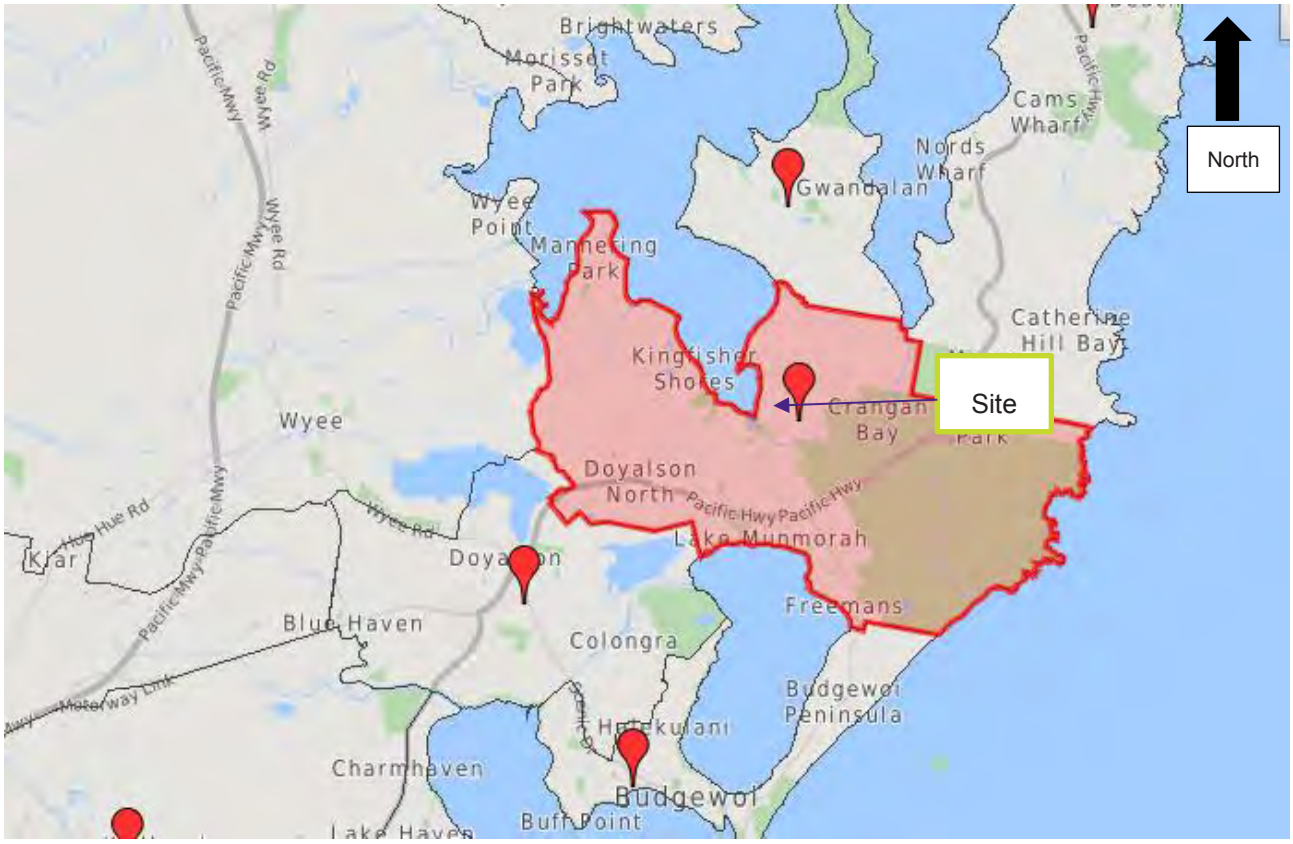


Figure 3 – ABS Regional study area – Lake Munmorah – Mannering Park Statistical Area

5.2 Existing Social Considerations

5.2.1 Population and People

5.2.1.1 Australian wide data

Key statistics include:

- The median age was 37.3.
- Working age population (aged 15-64 years %) - 65.7.

5.2.1.2 Lake Munmorah – Mannering Park Statistical Area

Key statistics include:

- The median age was 48.1.
- Working age population (aged 15-64 years %) - 55.4.

5.2.2 Income

5.2.2.1 Australian wide data

Key statistics include:

- Median household income (weekly) - $877.
- Median total income - $47,692 pa.

5.2.2.2 Lake Munmorah – Mannering Park Statistical Area

Key statistics include:

- Median household income (weekly) - $634.
- Median total income - $43,803 pa.

5.2.3 Education and Employment

5.2.3.1 Australian wide data

- Completed year 12 or equivalent – 51.9%.
- Unemployment rate – 6.9%.

5.2.3.2 Lake Munmorah – Mannering Park Statistical Area

- Completed year 12 or equivalent – 27.2%.
- Unemployment rate – 7.5%.

5.2.4 Health and Disability

5.2.4.1 Australian wide data

- Persons who have need for assistance with core activities – 5.1%.

5.2.4.2 Lake Munmorah – Mannering Park Statistical Area

- Persons who have need for assistance with core activities – 7.6%.

5.2.5 Family and Community

5.2.5.1 Australian wide data

- Average household size (no of persons) -2.6.
- Average monthly household rental payment - $1,524.
- Average monthly household mortgage payment - $1,958.

5.2.5.2 Lake Munmorah – Mannering Park Statistical Area

- Average household size (no of persons) -2.3.
- Average monthly household rental payment - $1,363.
- Average monthly household mortgage payment - $1617.

5.3 Crime

Below is a comparison of key crime statistics for Central Coast and NSW:

5.3.1 Non-domestic assault

- Central Coast 2018 – 438 incidents per 100,000.
- NSW 2018 – 405.4 incidents per 100,000.

5.3.2 Domestic assault

- Central Coast 2018 – 491 incidents per 100,000.
- NSW 2018 – 377 incidents per 100,000.

5.3.3 Robbery

- Central Coast 2018 – 24 incidents per 100,000.
- NSW 2018 –31.8 incidents per 100,000.

5.4 Community

There are a range of social and recreational services and facilities within a 5 km radius of the site as illustrated in **Appendix C**. These include:

- Woolworths Lake Munmorah on the corner of the Pacific Highway and Tall Timbers Road – 2.5km;
- Chain Valley Bay Neighbourhood Centre -2km;
- Council boat ramps – 700m;
- Foreshore recreation area - 700m;
- Lake Munmorah Doctors Surgery - 1.5km;
- Munmorah United Bowling Club -1.8km;
- Lake Munmorah High school – 1.2km;
- Lake Munmorah Public school -1.2km;
- Lake Munmorah community hall -2km;
- Lake Munmorah minimart -3km.

The site is serviced by the Central Coast Buses Network with 21 services per day, Monday to Friday and reduced services on Saturdays and Sundays.

6 IMPACT ASSESSMENT

6.1 Introduction

The proposed development of the site for residential purposes (MHE) is likely to have a positive impact on the locality. The new residents will utilise and patronise the local services including clubs, shops and public transport. It is anticipated that the new residential sites / dwellings will largely be taken up and occupied by "down-sizing" retirees. Potential residents in the estate will be from both the local area and from outside the region with limited superannuation / retirement savings. The proposed development will increase the housing options for the wider community while maintaining the existing affordable housing options currently available in the region.

A check list of potential impacts, including demographic, housing, access, individual and cultural needs, economic and health is provided in **Appendix D.**

6.2 Social Impacts

The total population of the Lake Munmorah – Mannering Park SA is 11,043 persons consisting of 5,421 males and 5,618 females.

Comparing the ABS data (Australia wide) with the data from the Lake Munmorah – Mannering Park SA the following can be stated:

- Median income Australia wide is $47,692 compared to Lake Munmorah – Mannering Park SA of $43,803;
- Couple families with children Australia wide is 44.7% compared to Lake Munmorah – Mannering Park SA of 33.2%;
- Couple families without children Australia wide was 37.8 compared to Lake Munmorah – Mannering Park SA of 48%;
- One parent families Australia wide was 15.8% compared to Lake Munmorah – Mannering Park SA of 17.3%;
- Average household size Australia wide is 2.6 persons compared to Lake Munmorah – Mannering Park SA of 2.3;
- Percentage aged 65 and above Australia wide is 15.7% compared to Lake Munmorah – Mannering Park SA of 28.3%;
- Median age Australia wide is 37.3 years compared to Lake Munmorah – Mannering Park SA of 48 years.

Considering the existing socio-economic data available it is clear that the Lake Munmorah – Mannering Park SA demographic is generally older with lower income and less children than the national average. The *Central Coast Regional Plan 2036* identifies that changes are required to address the housing needs of older people, students and seasonal populations. Industry research suggests a lack of supply of housing for the ageing in the northern area of the Central Coast.

The Demographic and Demand Analysis for Chain Valley Bay prepared for Corval Partners and Vivacity Property dated May 2019 confirms the above. In addition, the report identifies a catchment area for the project which is determined as a 30 minute drive from the site. The catchment includes 52 suburbs with the population clustered within areas of Gorokan, Blue Haven, Swansea, Toukley, Hamlyn Terrace, Budgewoi and Bonnells Bay.

The 65 plus population within the catchment is estimated to grow by 32.5% by 2027, which will increase its population with an additional 8,932 seniors requiring accommodation and service support.

6.3 Economic Impacts

The development of the site to accommodate approximately 190 additional dwellings will be close to services and facilities serving the local area, in particular, those approximately 2.5km south-west of the site along the Pacific Highway. The new dwellings will broaden the housing options for the local and wider community while reducing housing stress and maintaining and enhancing the existing affordable housing options currently available.

There will be economic and employment benefits generated during the construction phase of the development and further benefits following the completion of the estate. The proposed development will improve the long-term economic viability of the region and would be expected to generate up to 50 local construction jobs.

The operation of the estate will require ongoing staff for maintenance, administration and sales. Expected ongoing full-time job creation for the estate would be in the order of 12-15 new local jobs.

Overall, the additional population of the estate would be expected to generate at least an additional $4 million per annum to the local economy during operation.

6.4 Overall Impacts

The positive impacts associated with the planning proposal and eventual development of the MHE include:

- Providing the opportunity for increased housing choice. It will also contribute to growing the existing established community of retirees in Chain Valley Bay;
- Providing more choice for retirees to downsize;
- Providing more affordable housing choice;
- Increase patronage of local services. Growth in the population will result in more vibrancy on the local centres. The proposal will however provide private amenities which will reduce sole reliance on public community services;
- Creating a community of approximately 190 dwellings. It will promote social inclusion and connection within the community for the elderly. The estate will be a “lifestyle resort” for active seniors. It will create a community and provide social opportunities through the facilities and ongoing activities. Activities will be run by the community not the operator of the village.
- Homes will be built on site thus maximising the opportunity for local job creation during the construction phase; and
- Contributing to housing stock for downsizers (freeing up established homes for families) and address a shortfall in supply of homes for retirees. It will allow local to stay within their local area when they retire and remain connected to their families and the community.

The negative impacts associated with the proposal include:

- Increased population which will increase demand for local services. However, it should be noted that a “planned” population such as this, and other growth areas identified within the *Central Coast Regional Plan 2036* and the *Draft Greater Lake Munmorah Structure Plan,* will increase the viability of local services and centres. Development within the sub-region will provide Section 7.11 contributions towards public infrastructure provided by Central Coast Council.
- Potential increased demand for medical services if such services are not available. Again, it should be noted that this development is a “planned” population anticipated within the *Central Coast Regional Plan 2036* and anticipated by health care providers who will expand services to satisfy the demand

- Increase in local traffic. However, a preliminary traffic assessment report for the proposal, indicates that it would have no adverse effect on the level of service, capacity or traffic safety of Chain Valley Bay Road or Mulloway Road.

The degree of change likely to arise as result of the development relative to existing circumstances is small and the interests of the community as a whole are likely be enhanced as a result of the proposed development. Associated economic impacts are likely to be incremental as the site is developed.

The proposed rezoning reflects a positive response to the evolving demand for affordable housing for an ageing population in the area and the rising cost of housing which is particularly relevant to those who live in larger city communities. Given the lower than average socio-economic situation of residents of Lake Munmorah – Mannering Park as determined by an assessment of the ABS statistical data, it is reasonable to suggest that the overall social and economic impacts of the proposal will be positive for the local community generally. The proposed development site is also particularly well suited for those people wishing to relocate to the area following retirement or approaching retirement.

The site is well connected to the local road and highway network giving easy and fast access to the Hunter, Sydney and the Central Coast. It is also close to services and facilities serving the local area.

7 CONCLUSION

This SIA has been prepared in support of a planning proposal to rezone land at 45 Mulloway Road Chain Valley Bay from E3 Environmental Management to RE2 Private Recreation. The likely future use of the land is a MHE for approximately 190 sites. The subject site is close to a range of services, shops and recreational facilities and the proposed rezoning is a response to the evolving demand for affordable housing for an ageing population in the area and the rising cost of housing which is particularly relevant to those who live in larger city communities.

Overall, the planning proposal and subsequent development will have a positive social and economic impact and will result in a limited degree of change to the existing community. Development of the site will enhance the life chances, health and culture of the local community as well as the viability of local businesses and services.

It is therefore recommended that Council support the planning proposal.

This SIA has been prepared by RPS. A brief outline of the capabilities of RPS to carry out such work is contained in **Appendix E**.

REFERENCES

- Australian Bureau of Statistics – Lake Munmorah – Mannering Park Census area
- Bureau of Crime Statistics and Research website.
- *Central Coast Regional Plan 2036.*
- Demographic and Demand Analysis for Chain Valley Bay prepared for Corval Partners and Vivacity Property dated May 2019 (not published)
- Draft *Greater Lake Munmorah Structure Plan*

Appendix A

Development Plan

Draft Masterplan Option 9

Preliminary Sketch - Not for submission of Publication - Not for Construction

A-5101
1816
Manufactured Housing

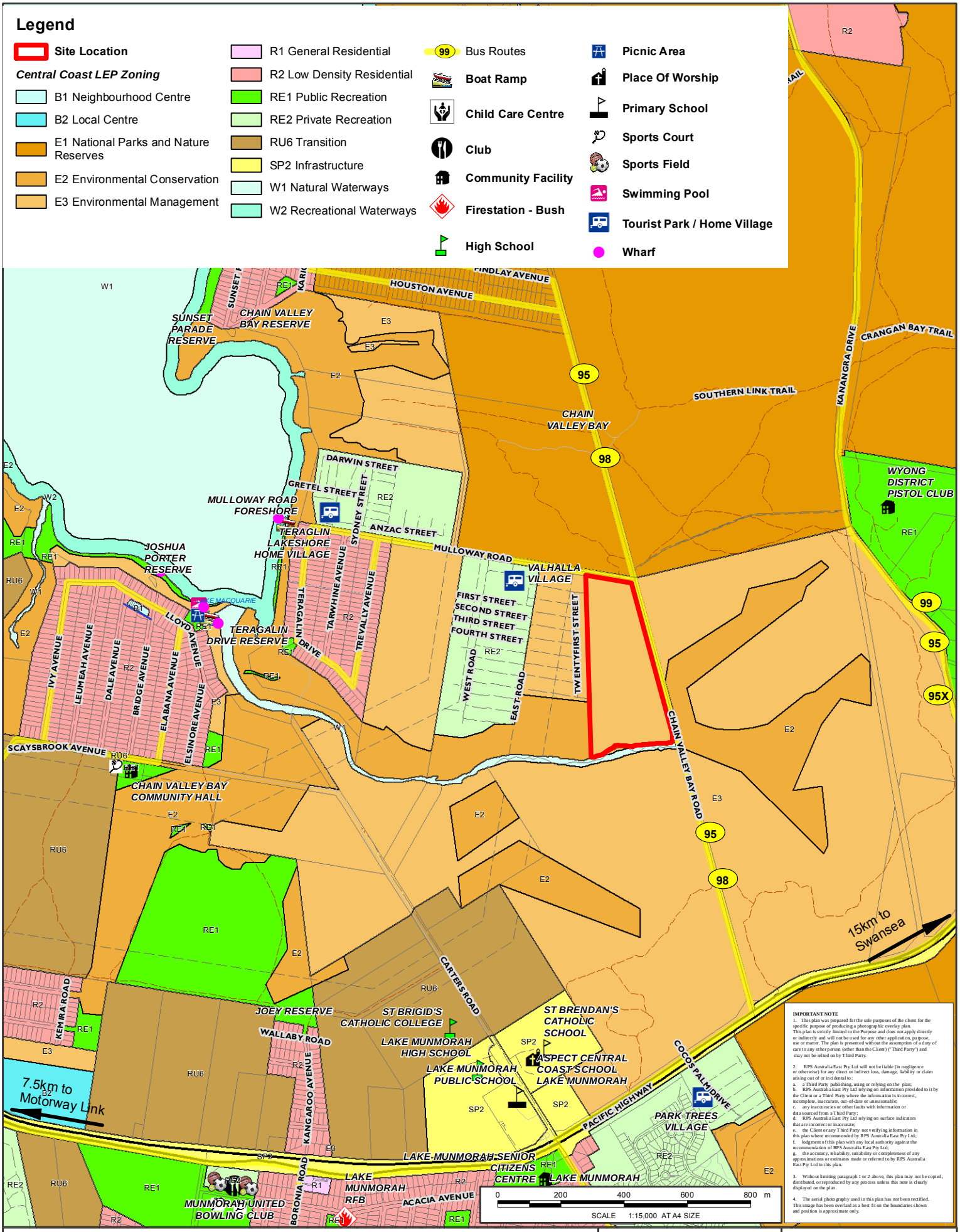
Nov 2018

MAKO ARCHITECTURE

MAKO ARCHITECTURE PTY LTD
SUITE 108 59 MALBOROUGH ST
SURRY HILLS NSW 2010
WWW.MAKOARCHITECTURE.COM.AU
NOM. ARCH. REG. NO. 8886

Appendix B

Site Analysis Plan



APPENDIX B - SITE ANALYSIS PLAN

LOCATION: 45 MULLOWAY RD CHAIN VALLEY BAY	DATUM: GDA94
	PROJECTION: MGA Zone 56
JOB NO.: **PR 144630**	Data Sources: RPS, Client Land and Property
PURPOSE: PLANNING	
Technician: Natalie.Wood Date: 4/07/2019	

CLIENT: CORVAL PARTNERS LIMITED

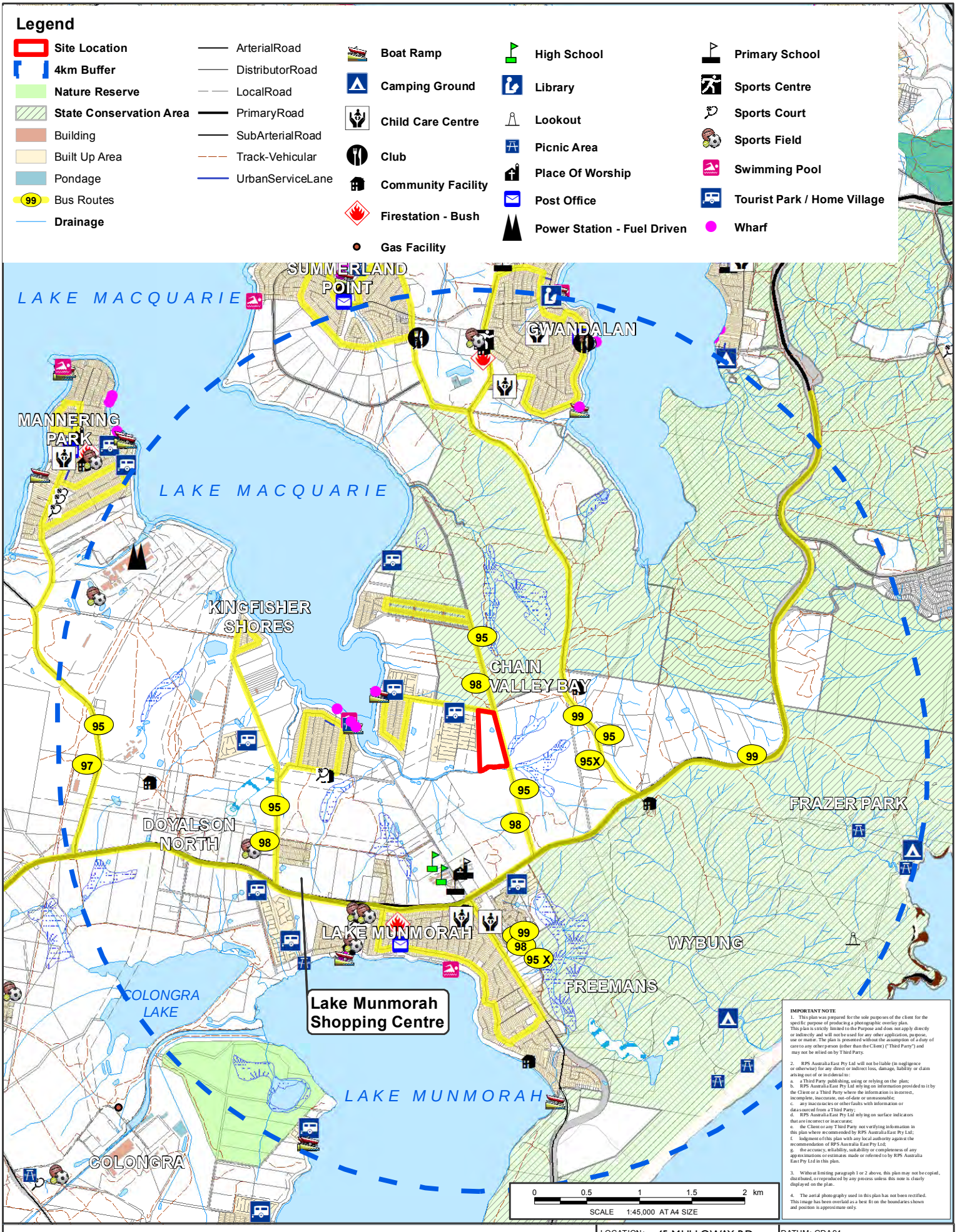
RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
Unit 2A, 45 Fitzroy Street, Carrington, NSW, Australia, 2294 PO Box 120, Carrington, NSW, 2294
T: 02 4940 4200 F: 02 4940 4299 www.rpsgroup.com.au

Path: J:\JOBS\144K\144630 Chain Valley Bay\10 - Drafting\Arcgis Map Documents\Planning\144630 Site Analysis A A4 20180704.mxd

NEW_A4_Portrait 2018 Rev:B Produced:NW Reviewed:NW Date: 10/05/2018

Appendix C

Social and recreational services plan



APPENDIX C - SOCIAL AND RECREATIONAL SERVICE MAP

LOCATION: 45 MULLOWAY RD CHAIN VALLEY BAY	DATUM: GDA94 PROJECTION: MGA Zone 56
JOB NO.: **PR 144630** PURPOSE: PLANNING Technician: Natalie.Wood Date: 4/07/2019	Data Sources: RPS, Client Land and Property

CLIENT: CORVAL PARTNERS LIMITED

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
Unit 2A, 45 Fitzroy Street, Carrington, NSW, Australia, 2294 PO Box 120, Carrington, NSW, 2294
T: 02 4940 4200 F: 02 4940 4299 www.rpsgroup.com.au

Path: J:\JOBS\144K\144630 Chain Valley Bay\10 - Drafting\Arcgis Map Documents\Planning\144630 Services Map A A4 20180703.mxd

NEW_A4_Portrait 2018 Rev:B Produced:NW Reviewed:NW Date: 10/05/2018

Appendix D

Social Impact Requirements

Andrew Biller

From: Jenny Mewing <Jenny.Mewing@centralcoast.nsw.gov.au>
Sent: Thursday, 27 June 2019 11:11 AM
To: Andrew Biller
Subject: RE: 45 Mulloway Road Chain Valley Bay - Social Impact Assessment Query

Hi Andrew,

Please find below Council's requirement for an SIA for this site.

Table1: Typical Phases involved in undertaking a CSIA

Phase	
Phase 1: Understanding the local community and local issues	a. Understand development proposal b. Clarify roles and responsibilities of all associated with the SIA, including other specialist studies being undertaken for the DA. c. Identify the social area of influence of the proposal (e.g. 'communities of place' and 'communities of interest') d. Undertake Community Profiling and collate relevant baseline data. e. Inform local community of the proposal f. Identify individuals and groups likely to be affected g. Develop inclusive community engagement strategies/plan to include all stakeholders h. Conduct Community Engagement as per strategies/ plan i. Identify possible issues that have potential to be a concern
Phase 2: Predict, Analyse and Assess the likely impacts	a. Determine the social impacts that are likely to result from the proposal b. Consider any direct and indirect impacts c. Consider cumulative impacts d. Determine how affected groups/ individuals will respond e. Establish the significance of the predicted impacts f. Devise alternative solutions
Phase 3: Develop and Implement Strategies	a. Identify and describe ways of addressing potential negative impacts b. Develop and implement ways of enhancing benefits of the proposal c. Develop strategies for communities to cope with change d. Develop and implement appropriate feedback mechanisms
Phase 4: Design and Implement Monitoring programs	a. Develop a monitoring plan b. Consider how adaptive management will be implemented to respond to changes over time c. Undertake an evaluation and periodic review

Table 2: Typical Report Content

Information	Details
Introduction/ Background	o Purpose of the CSIA o How the CSIA was prepared (methodology) o Qualifications and capability of person preparing the CSIA
Proposal description	Description of the proposed development, site and geographic location
Community Profile and Social Baseline	Description and analysis of demographics including(but not limited to): o Population growth and projections o Likely profile of the future population including age structure and Household type o Age structure o Family & household structure o Education, Employment and Labour Force Data o Income o Transport o SEIFA Index of Disadvantage o Crime Statistics o Local history and community values o Existing social infrastructure in the locality
Stakeholders	Identification of key stakeholders affected by the proposal: o Those that live nearby o Those that may be directly affected o Those who have an interest in the proposal
Community Consultation	o Description of types of community engagement methods that were undertaken and the issues raised o A summary of the key themes/ social impacts emerging from the engagement process o A list of groups and individuals consulted
Potential Social Impacts/ Changes	Identification of the potential social impacts and changes that require further consideration and assessment

Information	Details
Assessment of Social Impacts and Changes	Evaluation and determination of the probable impact of the change, based on an assessment of the nature and scale of the impacts associated with the proposed development including: o Whether the impact is positive or negative o The number and nature of people likely to be affected o Principles of social justice (equity, access, fairness, inter-generational impacts) o The extent to which the interests of the community as a whole are enhanced or sustained o The degree of change likely to arise as a result of the development relative to the existing circumstances, o The level of controversy anticipated, and o Whether or not the impacts would represent a good planning outcome o Whether the impact will be direct (caused by the development and occur at the time and place of the proposal) or indirect (caused by the development but occur later in time or over a wider geographical area) o The frequency of the impact i.e. temporary or re-occurring o The duration of the impact o The potential for cumulative impacts (the total impacts of multiple individual projects each of which may have a minimal impact but when combined have a much larger impact) o The significance of potential impacts o The geographical impact i.e. local or wider area o The overall impact considered
Mitigation Measures	o Description of the proposed mitigation strategies/ measures to manage the probable negative impacts and enhance any positive impacts o Development of monitoring and response plans (where relevant) o Community engagement strategies to inform the community regarding the proposed mitigation measures
Conclusion/ Recommendation	Summary of the main findings and recommendations including consideration of: o Key probable positives and negative impacts as a result of proposed development. o Whether positive social impacts outweigh negative impacts. o Whether negative impacts can be mitigated to acceptable levels o Whether positive impacts can be enhanced
References	List of all references used in the report and any key references that informed the design of the SIA research

Kind regards

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Local Planning and Policy
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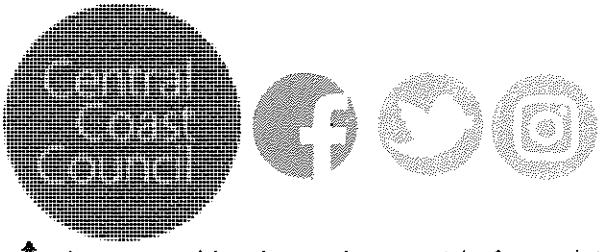

Please consider the environment before printing this email

From: Andrew Biller [mailto:Andrew.Biller@rpsgroup.com.au]
Sent: Wednesday, 19 June 2019 3:32 PM
To: Ask
Subject: RE: 45 Mulloway Road Chain Valley Bay - Social Impact Assessment Query

Att: Jenny Mewing

Hi Jenny

RPS have been asked to prepare a Social Impact Assessment to support a proposal to rezone land at 45 Mulloway Road Chain Valley Bay (Lot 5 in DP 1228880) from E3 Environmental Management to RE2 Private Recreation.

I am just trying to establish if Council has a Social Planner I could talk with and/or what policy documents Council has re Social Impact Assessments that I should consider.

I would be grateful if you could let me know.

Kind Regards

Andrew Biller
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Appendix E

RPS SIA Capability Statement

SOCIAL IMPACT ASSESSMENT

RPS is a lead consultancy providing local solutions in planning, environment and development.

About RPS

With over 30 years of experience and a strong track record in the Hunter Region, RPS Newcastle provides a range of professional and technical services to the urban growth sector.

Our local multidisciplinary team collaborates to assist clients in the development of projects from concept to completion.

Our services include, but are not limited to, Planning, Project Management, Environment, Bushfire Planning, GIS and Social Impact Assessment (SIA).

Why choose us?

RPS undertakes thorough social impact assessments to assist the planning of a wide-range of development projects, small to large. Such projects include aged housing, caravan parks, child care, manufactured home estates, vertical villages and similar types of development.

RPS integrates assessment methodologies with stakeholder engagement to enhance effectiveness. We also undertake Crime Prevention through Environmental Design (CPTED) assessments when required.

Our SIA experience

- Cardiff Childcare including CPTED assessment
- Killingworth Local
- Environmental Study (LES)
- The Bay Resort, Anna Bay
- Speers Point LES
- Soldiers Point Aged Care
- Ballina Service Station CPTED
- Bulahdelah Planning Proposal
- Tomago Van Village
- Regis Aged Care
- Warners Bay Foreshore Plan of Management

Contact us

Rob Dwyer

Newcastle Planning Manager and SIA Expert
RPS Australia East Pty Ltd
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05 F - ACHA

Vivacity Property Pty Ltd

45 Mulloway Road, Chain Valley Bay

LGA: Central Coast

Aboriginal Cultural Heritage Assessment (ACHA)

18 November 2019

McCARDLE CULTURAL HERITAGE PTY LTD

ACN 104 590 141 • ABN 89 104 590 141

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McCARDLE
CULTURAL HERITAGE

Report No: J19055 ACHA	
Approved by:	Penny McCardle
Position:	Director
Signed:	
Date:	18 November 2019

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EXECUTIVE SUMMARY

McCardle Cultural Heritage Pty Ltd (MCH) was engaged by Vivacity Property Pty Ltd prepare an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed development of a manufactured home estate with approximately 190 homesites, community facilities and amenities located at 45 Mulloway Road, Chain Valley Bay.

The assessment has been undertaken to meet the NSW Biodiversity and Conservation Division (BCD) formerly the Office of Environment and Heritage (OEH), Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010), the OEH Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), the DECCW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b) and the brief.

Including Lot 5 DP122880, the project area consists of gentle south facing slopes and a creek along the southern border. The underlying geology of the project area is Triassic Narrabeen Group geological formation consisting of claystone. Sandstone and shale, none of which were utilised for stone tool manufacture by past Aboriginal people of the area. Situated on the erosional Doyalson soil landscape the soils consist of an A1 horizon of up to 10 centimetres of brown loose loamy sand that overlays 10-30 centimetres of the A2 horizon of hard setting bleached yellowish brown clay sand and earthy bright yellowish-brown sandy clay loam is present at 30-60 centimetres depth. In terms of fresh water availability, the project area is situated approximately one-kilometre east of Chain Valley Bay and Kiriganan Creek (3rd order) runs west along the southern border of the project area, flowing into Chain Hill Bay. Thus, the project area may be considered well-resourced in terms of water availability and associated subsistence and medicinal resources along the Creek and in close proximity. The drainage throughout the project area would have supported a range of faunal populations including kangaroo, wallaby, goanna, snakes and a variety of birds. A wider variety of resources would have been available in areas to the north and south east where more reliable water would have been available. The project area has been cleared, used for early agricultural activities (ploughing and grazing) and currently contains at least two (2) dwellings, numerous sheds, as well as an automotive repair business and other commercial/industrial use (extractive materials stockpiles and/or earthmoving depot). Numerous tracks and two dams are also present.

A search of the BCD AHIMS register has shown that 20 known Aboriginal sites are currently recorded within three kilometres of the project and include seven shell middens, six artefact sites, three scar trees, three shell and artefact sites and one restricted site. Based on the regional and local archaeological contexts it was found that within the project area there was a high potential for evidence of past Aboriginal land use along Kiriganan Creek, will be within 50 metres of the creek, will include artefact scatters or isolated finds and will contain assemblages dating from the mid to late Holocene, featuring tuff as the dominant raw material, with lesser quantities of quartz, chert, and other raw materials. Artefacts will consist predominantly of flaked pieces, flakes, broken flakes and cores. Some modified artefacts including retouched flakes, and asymmetrical and symmetrical backed artefacts can be expected. Dependent on the level of exposure within the project area, the sites were expected to be located within the disturbed context of erosion scars and within the remnant soil horizon, and whilst it is possible that sub-surface deposits will be present within parts of the project area, this is entirely reliant on the level of disturbance across the site.

For ease of management, the project area was divided into 2 Survey Units (SUs) that were based on landforms and included up to 20 metres in width along Kiriganan Creek (3rd order) and the reminder of the project t area which consisted of a gentle south facing slope. The creek along the southern boundary of the project area was densely vegetated with very low visibility. Vegetation included closed bushland, shrubs and lantana. The remainder of the project area consisted of a gentle south

facing slope. Two houses are located at the north, a work shed/garage in the north west, the garage and caravan storage are located along the western boundary, a house and sheds in the centre of the project area and two2 large dams. Additionally, there are tracks, excavated areas throughout, rubbish stockpiles and infrastructure. Vegetation is predominantly pasture grass with some scattered trees and bushland in the south. Visibility was poor and exposures moderate. The overall effective coverage for project area was 20.50% with grass being the limiting factor and bushland to the south.

No sites were identified in the project area during the survey and this is likely due to the impacts from previous works associated with clearing, ploughing, grazing and construction works associated with house, dwelling and shed construction as well as fencing, tracks and dams.

Given the known extent and content of sites typically situated along the reliable water courses, and given that the area along Kiriganan Creek appears to remain relatively undisturbed, the area along the creek, up to 50 metres in width, has potential to contain evidence of past Aboriginal land use. This area is identified as a PAD and extends south outside the project area.

As no sites were identified during the survey and the identified disturbed landscape due to previous landuses, there are no impacts on the archaeological record.

The exception to this is the southern bushland area that has been identified as a PAD. As it remains unknown if sites are present within the PAD at this stage, the impacts to the archaeological record in the southern bushland area remain unknown.

Based on the environmental, cultural and archaeological contexts as well as the survey results, the following recommendations are made:

1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974; and

2) Should any Aboriginal objects be uncovered during works, all work will cease in that location immediately and the Environmental Line contacted.

3) If the identified PAD will be impacted upon by any future development an archaeological subsurface investigation will be required in the PAD area in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW.

GLOSSARY

Aboriginal Cultural Heritage Values: traditional values of Aboriginal people, handed down in spiritual beliefs, stories and community practices and may include local plant and animal species, places that are important and ways of showing respect for other people.

Aboriginal Place: are locations that have been recognised by the Minister for Climate Change and the Environment (and gazetted under the *National Parks and Wildlife Act 1974*) as having special cultural significance to the Aboriginal community. An Aboriginal Place may or may not include archaeological materials.

Aboriginal Site: an Aboriginal site is the location of one or more Aboriginal archaeological objects, including flaked stone artefacts, midden shell, grinding grooves, archaeological deposits, scarred trees etc.

Artefact: any object that is physically modified by humans.

Assemblage: a collection of artefacts associated by a particular place or time, assumed generated by a single group of people, and can comprise different artefact types.

Axe: a stone-headed axe usually having two ground surfaces that meet at a bevel.

Backed artefact: a stone tool where the margin of a flake is retouched at a steep angle and that margin is opposite a sharp edge.

Background scatter: a term used to describe low density scatter of isolated finds that are distributed across the landscape without any obvious focal point.

Blade: a flake that is at least twice as long as it is wide.

Bondi point: a small asymmetrical backed artefact with a point at one end and backing retouch.

Core: a chunk of stone from which flakes are removed and will have one or more negative flake scars but no positive flake scars. The core itself can be shaped into a tool or used as a source of flakes to be formed into tools.

Debitage: small pieces of stone debris that break off during the manufacturing of stone tools. These are usually considered waste and are the by-product of production (also referred to as flake piece).

Flake: any piece of stone struck off a core and has a number of characteristics including ring cracks showing where the hammer hit the core and a bulb of percussion. May be used as a tool with no further working, may be retouched or serve as a platform for further reduction.

Flaked piece/waste flake: an unmodified and unused flake, usually the by-product of tool manufacture or core preparation (also referred to as debitage).

Formation processes: human caused (land uses etc) or natural processes (geological, animal, plant growth etc) by which an archaeological site is modified during or after occupation and abandonment. These processes have a large effect on the provenience of artefacts or features.

Grinding stone: an abrasive stone used to abrade another artefact or to process food.

Hammer stone: a stone that has been used to strike a core to remove a flake, often causing pitting or other wear on the stone's surface.

Harm: is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated

Holocene: the post-glacial period, beginning about 10,000 B.P.

In situ: archaeological items are said to be "in situ" when they are found in the location where they were last deposited.

Pleistocene: the latest major geological epoch, colloquially known as the "Ice Age" due to the multiple expansion and retreat of glaciers. Ca. 3.000, 000-10,000 years B.P.

Retouched flake: a flake that has been flaked again in a manner that modified the edge for the purpose of resharpening that edge.

Stratified Archaeological Deposits: Aboriginal archaeological objects may be observed in soil deposits and within rock shelters or caves. Where layers can be detected within the soil or sediments, which are attributable to separate depositional events in the past, the deposit is said to be stratified. The integrity of sediments and soils are usually affected by 200 years of European settlement and activities such as land clearing, cultivation and construction of industrial, commercial and residential developments.

Taphonomy: the study of processes which have affected organic materials such as bone after death; it also involves the microscopic analysis of tooth-marks or cut marks to assess the effects of butchery or scavenging activities.

Traditional Aboriginal Owners: Aboriginal people who are listed in the Register of Aboriginal owners pursuant to Division 3 of the *Aboriginal Land Register Act (1983)*. The Registrar must give priority to registering Aboriginal people for lands listed in Schedule 14 of the *National Parks and Wildlife Act 1974* or land subject to a claim under 36A of the *Aboriginal Land Rights Act 1983*.

Traditional Knowledge: Information about the roles, responsibilities and practices set out in the cultural beliefs of the Aboriginal community. Only certain individuals have traditional knowledge and different aspects of traditional knowledge may be known by different people, e.g. information about men's initiation sites and practices, women's sites, special pathways, proper responsibilities of people fishing or gathering food for the community, ways of sharing and looking after others, etc.

Typology: the systematic organization of artefacts into types on the basis of shared attributes.

Use wear: the wear displayed on an artefact as a result of use.

ACRONYMS

ACHA	Aboriginal Cultural Heritage Assessment
ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BCD	Biodiversity and Conservation Division

BCD AHIMS SITE ACRONYMS

ACD	Aboriginal ceremonial and dreaming
AFT	Artefact (stone, bone, shell, glass, ceramic and metal)
ARG	Aboriginal resource and gathering
ART	Art (pigment or engraving)
BOM	Non-human bone and organic material
BUR	Burial
CFT	Conflict site
CMR	Ceremonial ring (stone or earth)
ETM	Earth mound
FSH	Fish trap
GDG	Grinding groove
HAB	Habitation structure
HTH	Hearth
OCQ	Ochre quarry
PAD	Potential archaeological Deposit
SHL	Shell
STA	Stone arrangement
STQ	Stone quarry
TRE	Modified tree (carved or scarred)
WTR	Water hole

1 INTRODUCTION

1.1 INTRODUCTION

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by Vivacity Property Pty Ltd prepare an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed development of a manufactured home estate with approximately 190 homesites, community facilities and amenities located at 45 Mulloway Road, Chain Valley Bay.

The assessment has been undertaken to meet the NSW Biodiversity and Conservation Division (BCD) formerly the Office of Environment and Heritage (OEH), Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010), the OEH Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), the DECCW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b) and the brief.

1.2 PROPONENT DETAILS

Vivacity Property Pty Ltd

1.3 THE PROJECT AREA

The project area is defined by the proponent and is located is located at the eastern end of Mulloway Road at the intersection with Chain Valley Bay Road. Including Lot 5 DP122880, location and extent of the project area is illustrated in Figures 1.1 to 1.3.

Figure 1.1 Regional location of the project area

Figure 1.2 Local location of the project area

Figure 1.3 Aerial photograph of the project area (nearmap 2019)

1.4 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposal is for a manufactured home estate with approx. 190 homesites, community facilities and amenities located at 25 Mulloway Road, Chain Valley Bay.

Any future development of the project will have regard to the requirements and provision of the National Parks and Wildlife Act 1974 and any impacts will be managed in accordance with the requirements and provisions of the National Parks and Wildlife Act 1974 where required.

1.5 PURPOSE OF THE ARCAHEOLOGIVAL ASSESSMENT

The purpose of the assessment is to assess any archaeological constraints to support the proposal and to provide opportunities and options to ensure any cultural materials present are protected through appropriate mitigation and management.

1.6 OBJECTIVE OF THE ASSESSMENT

The objective of the assessment is to identify areas of indigenous cultural heritage value, to determine possible impacts on any indigenous cultural heritage identified (including potential subsurface evidence) and to develop management recommendations where appropriate. The assessment employs a regional approach, taking into consideration the landscape of the project area (landforms, water resources, soils, geology etc), the regional archaeological patterning identified by past studies, natural processes (e.g. erosion) as well as land uses and associated impacts across the landscape and any associated cultural that may be present.

1.7 PROJECT BRIEF/SCOPE OF WORK

The following tasks were carried out:

- a review of relevant statutory registers and inventories for indigenous cultural heritage including the NSW BCD Aboriginal Heritage Information Management System (AHIMS) for known archaeological sites, The National Heritage List, the Commonwealth Heritage List, the Australian Heritage Database, Australia's National Heritage List, The National Trust Heritage Register State Heritage Inventory the and the Lake Macquarie Local Environmental Plan;
- a review of local environmental information (topographic, geological, soil, geomorphological, vegetation, erosion) to determine the likelihood of archaeological sites and specific site types that may be present, prior and existing land uses and associated impacts and site disturbance that may affect site integrity;
- a review of previous cultural heritage investigations to determine the extent of archaeological investigations in the area and identify any archaeological patterns;
- the development of a predictive archaeological statement based on the data searches and literature review;
- identification of human and natural impacts in relation to the known and any new archaeological sites and archaeological potential within the project area;
- consultation with the Aboriginal stakeholders as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010);
- undertake a site inspection with the participation of the registered Aboriginal stakeholders, and

- the development of mitigation and conservation measures in consultation with the registered Aboriginal stakeholders.

1.8 LEGISLATIVE CONTEXT

The following overview of the legislative framework, is provided solely for information purposes for the client, and should not be interpreted as legal advice. MCH will not be liable for any actions taken by any person, body or group as a result of this general overview and MCH recommends that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the general summary below.

Land managers are required to consider the effects of their activities or proposed development on the environment under several pieces of legislation. Although there are a number of Acts and regulations protecting Aboriginal heritage, including places, sites and objects, within NSW, the three main ones include:

- National Parks and Wildlife Act (1974, as amended)
- National Parks and Wildlife Regulation (2009)
- Environmental Planning and Assessment Act (1979)

1.8.1 NATIONAL PARKS AND WILDLIFE ACT (1974, AS AMENDED)

The National Parks and Wildlife Act (1974), Amended 2010, is the primary legislation for the protection of Aboriginal cultural heritage in New South Wales. The NPW Act protects Aboriginal heritage (places, sites and objects) within NSW and the Protection of Aboriginal heritage is outlined in s86 of the Act, as follows:

- "A person must not harm or desecrate an object that the person knows is an Aboriginal object" s86(1)
- "A person must not harm an Aboriginal object" s86(2)
- "A person must not harm or desecrate an Aboriginal place" s86(4)

Penalties apply for harming an Aboriginal object, site or place. The penalty for knowingly harming an Aboriginal object (s86[1]) and/or an Aboriginal place (s86[4]) is up to $550,000 for an individual and/or imprisonment for 2 years; and in the case of a corporation the penalty is up to $1.1 million. The penalty for a strict liability offence (s86[2]) is up to $110,000 for an individual and $220,000 for a corporation.

Harm under the National Parks and Wildlife Act (1974, as amended) is defined as any act that; destroys defaces or damages the object, moves the object from the land on which it has been situated, causes or permits the object to be harmed. However, it is a defence from prosecution if the proponent can demonstrate that;

1) harm was authorised under an Aboriginal Heritage Impact Permit (AHIP) (and the permit was properly followed), or
2) the proponent exercised due diligence in respect to Aboriginal heritage.

The 'due diligence' defence (s87[2]), states that if a person or company has applied due diligence to determine that no Aboriginal object, site or place was likely to be harmed as a result of the activities proposed for the Project Area, then liability from prosecution under the NPW Act 1974 will be

removed or mitigated if it later transpires that an Aboriginal object, site or place was harmed. If any Aboriginal objects are identified during the activity, then works should cease in that area and OEH notified (DECCW 2010:13). The due diligence defence does not allow for continuing harm.

The archaeological due diligence assessment and report has been carried out in compliance with the NSW DECCW 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.

1.8.2 NATIONAL PARKS AND WILDLIFE REGULATION (2009)

The National Parks and Wildlife Regulation 2009 provides a framework for undertaking activities and exercising due diligence in respect to Aboriginal heritage. The Regulation (2009) recognises various due diligence codes of practice, including the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW which is pertinent to this report, but it also outlines procedures for Aboriginal Heritage Impact Permit (AHIP) applications and Aboriginal Cultural Heritage Consultation Requirements (ACHCRs); amongst other regulatory processes.

1.8.3 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 (EP&A ACT)

EP&A Act establishes the statutory framework for planning and environmental assessment in NSW and the implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. The EP&A Act contains three parts which impose requirements for planning approval:

- Part 3 of the EP&A Act relates to the preparation and making of Environmental Planning Instruments (EPIs), State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs).
- Part 4 of the EP&A Act establishes the framework for assessing development under an EPI. The consent authority for Part 4 development is generally the local council, however the consent authority may by the Minister, the Planning Assessment Commission or a joint regional planning panel depending upon the nature of the development.
- Part 4, Division 4.1 of the EP&A Act establishes the assessment pathway for State significant development (SSD) declared by the State Environmental Planning Policy (State and Regional Development) 2011 (NSW). Once a development is declared as SSD, the Secretary's Environmental Assessment Requirements (SEARs) will be issued outlining what issues must be considered in the EIS.
- Part 5 of the EP&A Act provides for the control of 'activities' that do not require development consent and are undertaken or approved by a determining authority. Development under Part 5 that are likely to significantly affect the environment is required to have an EIS prepared for the proposed activity.
- Part 5.1 of the EP&A Act establishes the assessment pathways for State significant infrastructure (SSI). Development applications made for SSI can only be approved by the Minister. Once a development is declared as SSI, the SEARs will be issued outlining what issues must be addressed in the EIS.

The applicable approval process is determined by reference to the relevant environmental planning instruments and other controls, LEPs and State Environmental Planning Policies (SEPPs). This project falls under Part 3.33.

1.9 QUALIFICATIONS OF THE INVESTIGATOR

Penny McCardle: Principal Archaeologist & Forensic Anthropologist has 10 years experience in Indigenous archaeological assessments, excavation, research, reporting, analysis and consultation. Six years in skeletal identification, biological profiling and skeletal trauma identification.

- BA (Archaeology and Palaeoanthropology, University of New England 1999
- Hons (Archaeology and Palaeoanthropology): Physical Anthropology), University of New England 2001
- Forensic Anthropology Course, University of New England 2003
- Armed Forces Institute of Pathology Forensic Anthropology Course, Ashburn, VA 2008
- Analysis of Bone trauma and Pseudo-Trauma in Suspected Violent Death Course, Erie College, Pennsylvania, 2009
- PhD, University of Newcastle, 2019

1.10 REPORT STRUCTURE

The report includes Section 1 which outlines the project, Section 2 provides the consultation, Section 3 presents the environmental context, Section 4 presents ethno historic context, Section 5 provides the archaeological background, Section 6 provides the results of the fieldwork, analysis and discussion; Section 7 presents the development impact assessment, Section 8 presents the mitigation strategies and Section 9 presents the management recommendations.

2 CONSULTATION

As per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010), MCH followed the four stages of consultation as set out below. All correspondences for each stage are provided in Appendix A.

In relation to cultural significance, MCH recognises and supports the indigenous system of knowledge. That is, that knowledge is not 'open' in the sense that everyone has access and an equal right to it. Knowledge is not always definitive (in the sense that there is only one right answer) and knowledge is often restricted. As access to this knowledge is power, it must be controlled by people with the appropriate qualifications (usually based on age seniority, but may be based on other factors). Thus, it is important to obtain information from the correct people: those that hold the appropriate knowledge of those sites and/or areas relevant to the project. It is noted that only the Aboriginal community can identify and determine the accepted knowledge holder(s) may be not archaeologists or proponents. If knowledge is shared, that information must be used correctly and per the wishes of the knowledge holder.

Whilst an archaeologist may view this information as data, a custodian may view this information as highly sensitive, secret/sacred information and may place restrictions on its use. Thus, it is important for MCH to engage in affective and long-term consultation to ensure knowledge is shared and managed in a suitable manner that will allow for the appropriate management of that site/area. MCH also know that archaeologists do not have the capability nor the right to adjudicate on the spirituality of a particular location or site as this is the exclusive right of the traditional owners who have the cultural and hereditary association with the land of their own ancestors. For these reasons, consultation forms an integral component of all projects and this information is sought form the registered stakeholders to be included in the report in the appropriate manner that is stipulated by those with the information.

2.1 STAGE 1: NOTIFICATION & REGISTRATION OF INTEREST

The aim of this stage is to identify, notify and register Aboriginal people and/or groups who hold cultural knowledge that is relevant to the project area, and who can determine the cultural significance of any Aboriginal objects and/or places within the proposed project area. In order to do this, the sources identified by OEH (2010:10) and listed in Table 2.1, to provide the names of people who may hold cultural knowledge that is relevant to determining the significance of Aboriginal objects and/or places were contacted by letter on 2nd August 2019 and it was stipulated that if no response was received, the project and consultation will proceed. Information included in the correspondence to the sources listed in Table 2.1 included the name and contact details of the proponent, an overview of the proposed project including the location and a map showing the location.

Table 2.1 Sources contacted

Organisations contacted	Response
Biodiversity and Conservation Division	39 groups
DLALC	no response
Central Coast Council	no response
Registrar Aboriginal Land Rights Act 1983	DLALC
National Native Title Tribunal	no claims
Native Title Services Corporation Limited	no response
Hunter Local Land Services	no response

Following this, MCH compiled a list of people/groups to contact (Refer to Appendix A). As per the Aboriginal cultural heritage consultation requirements for proponents (April 2010), archaeologists and proponents must write to all those groups provided asking if they would like to register their interest in the project. Unfortunately, some Government departments written to requesting a list of groups to consult with do not differentiate groups from different traditional boundaries and provide an exhaustive list of groups from across the region including those outside their traditional boundaries.

MCH wrote to all parties identified by the various departments on 22nd August 2019, and an advertisement was placed in the Central Coast Advocate on 30th August 2019. The correspondence and advertisement included the required information as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010) and requested to nominate the preferred option for the presentation of information about the proposed project: an information packet or a meeting and information packet (Refer to Stage 2). The Registered Aboriginal Parties (RAPs) are listed in Table 2.2.

Table 2.2 Registered Aboriginal Parties

RAP	Contact
DLALC	Amanda Shields
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer

2.2 STAGE 2: PRESENTATION OF INFORMATION

The aim of this stage is to provide the RAPs with information regarding the scope of the proposed project and the cultural heritage assessment process.

As the RAPs did not provide their preferred method of receiving information, an information packet was sent to all RAPs and included the required information as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010). and a written response to the proposed methods was due no later than 2nd October 2019. MCVH received no responses to the information packer or proposed methods of investigation.

The information pack also stipulated that consultation was not employment, and requested that in order to assist the proponent in the engagement of field workers, that the groups provide

information that will assist in the selection of field staff who may be paid on a contractual basis). This included, but was not limited to, experience in field work and in providing cultural heritage advice (asked to nominate at least two individuals who will be available and fit for work) and their relevant experience; and to provide a CV and insurance details.

The information pack also noted that failure to provide the required information by the date provided will result in a missed opportunity for the RAPs to contribute to their cultural heritage and the project will proceed.

2.3 STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

The aim of this stage is to facilitate a process whereby the RAPs can contribute to culturally appropriate information gathering and the research methodology, provide information that will enable the cultural significance of any Aboriginal objects and or/places within the proposed project area to be determined and have input into the development of any cultural heritage management options and mitigation measures. In order to do his, included in the information pack sent for Stage 2, was information pertaining to the gathering of cultural knowledge. This included the following information;

- MCH noted that information provided by RAPs may be sensitive and MCH and the proponent will not share that information with all RAPs or others without the express permission of the individual. MCH and the proponent extended an invitation to develop and implement appropriate protocols for sourcing and holding cultural information including any restrictions to place on information, as well as the preferred method of providing information;
- request for traditional/cultural knowledge or information associated with ceremonial, spiritual, mythological beliefs, traditions and known sites from the pre-contact period;
- request for traditional/cultural knowledge or information regarding sites or places with historical associations and/or cultural significance which date from the post-contact period and that are remembered by people today (e.g. plant and animal resource use areas, known camp sites); and
- request for traditional/cultural knowledge or information in relation to any sites or places of contemporary cultural significance (apart from the above) which has acquired significance recently.

During this process, the RAPs did not disclose any specific traditional/cultural knowledge or information of sites or places associated with spiritual, mythological, ceremonies or beliefs from the pre contact period within the project area or surrounding area. The stakeholders did not disclose any information pertaining to sites or places of cultural significance associated with the historic or contemporary periods within the project area or surrounding area. However, it must be noted that traditional/cultural knowledge and/or information regarding sites and/or places of cultural significance may exist that were not divulged to MCH by those consulted.

2.4 SURVEY

All RAPs were invited to participate in the survey on 17th October 2019. Unfortunately, no RAPs attended and the survey proceeded in accordance with the proposed methodology provided to the stakeholders for review.

2.5 STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT

Copies of the DRAFT report were forwarded to all RAPs for their review and were asked to provide a written or verbal response no later than C.O.B 18th November 2019. MCH received no response

All comments received from the RAPs were considered in the final report, all submissions responded to and the draft report altered to include their comments. All RAPs were provided a copy of the final report. All documentation regarding the consultation process is provided in Appendix A.

3 LANDSCAPE AND ENVIRONMENTAL CONTEXT

3.1 INTRODUCTION

Documenting and understanding the context of archaeological sites in relation to surrounding terrain features is essential to landscape archaeological studies worldwide (De Reu et al., 2013; De Reu et al., 2011; Turrero et al., 2013) and the nature and distribution of Aboriginal cultural materials in a landscape are strongly influenced by environmental factors such as topography, geology, landforms, climate, geomorphology, hydrology and the associated soils and vegetation (Hughes and Sullivan 1984). These factors influence the availability of plants, animals, water, raw materials, the location of suitable camping places, ceremonial grounds, burials, and suitable surfaces for the application of rock art. As site locations may differ between landforms due to differing environmental constraints that result in the physical manifestation of different spatial distributions and forms of archaeological evidence, these environmental factors are used in constructing predictive models of Aboriginal site locations.

Environmental factors also effect the degree to which cultural materials have survived in the face of both natural and human influences and affect the likelihood of sites being detected during ground surface survey. Site detection is dependent on a number of environmental factors including surface visibility (which is determined by the nature and extent of ground cover including grass and leaf litter etc) and the survival of the original land surface and associated cultural materials (by flood alluvium, erosion etc). It is also dependant on the exposure of the original landscape and associated cultural materials by human impacts (e.g. Aboriginal fire stick farming, clearing, logging, agricultural activities, construction works, mining etc), (Hughes and Sullivan 1984). Combined, these processes and activities are used in determining the likelihood of both surface and subsurface cultural materials surviving and being detected.

It is therefore necessary to understand the environmental factors, processes and activities, all of which affect site location, preservation and detection during surface survey and the likelihood of in situ subsurface cultural materials being present. The environmental factors, processes and disturbances of the surrounding environment and specific project area are discussed below.

3.2 TOPOGRAPHY

The topographical context is important to identify potential factors relating to past Aboriginal land use patterns as not all landforms are suitable camping locations, suitable for the application of rock art etc. The project area is located approximately one-kilometre east of Chain Valley Bay and consists of gentle south facing slopes and a creek along the southern border.

3.3 GEOLOGY

The underlying regional geology plays a major role in the structure of the surrounding environment (landforms, topography, geomorphology, vegetation, climate etc), and also influences patterns of past occupation and their manifestation in the archaeological record. The processes of sedimentation, uplift, ongoing physical and chemical weathering, re-deposition and volcanic activity have resulted in the formation of a complex landscape in the regional area that incorporates diversity in topography, vegetation and wildlife. For its Aboriginal inhabitants, these processes have resulted in landforms suitable for camping and deposits of raw materials essential to the manufacture of stone tools.

This is primarily relevant to past Aboriginal land use in regard to the location of stone resources or raw materials and their procurement for the manufacturing and modification of stone tools. Evidence of stone extraction, and manufacture, can be predicted to be concentrated in the areas of stone availability. However, stone can be transported for manufacture and/or trading across the region. Materials most dominant in stone tool manufacture throughout the Lake Macquarie area include indurated mudstone/tuff, chert and silcrete (Kuskie 2000) and others include quartz, chert, porcellanite, quartzite and basalt.

The underlying geology of the project area is Triassic Narrabeen Group geological formation consisting of claystone. Sandstone and shale (Sydney 1:100,000 geological map sheet), none of which were utilised for stone tool manufacture by past Aboriginal people of the area.

3.4 SOILS

The nature of the surrounding soil landscape also has implications for Aboriginal land use and site preservation, mainly relating to supporting vegetation and the preservation of organic materials and burials. The deposit of alluvial and aeolian sediments and colluvium movement of fine sediments (including artefacts) results in the movement and burying of archaeological materials. The increased movement in soils by this erosion is likely to impact upon cultural materials through the post-depositional movement of materials, specifically small portable materials such as stone tools, contained within the soil profiles.

The project area is situated on the erosional Doyalson soil landscape which is characterised by undulating rises with local relief up to 30 metres. The A1 horizon consists of up to 10 centimetres of brown loose loamy sand (pH 5.0 – 6.0) that overlay 10-30 centimetres of the A2 horizon of hard setting bleached yellowish brown clay sand that has soil pH ranging from 4.5 to 5.5 (Murphy 1993:49-50). Earthy bright yellowish-brown sandy clay loam is present at 30-60 centimetres depth (pH 4.5 – 5.5).

3.5 CLIMATE

Climatic conditions would also have played a part in past occupation of an area as well as impacted upon the soils and vegetation and associated cultural materials. Rainfall is generally higher and more reliable during summer although soil moisture tends to remain high throughout the year providing good conditions for ground cover growth. Average annual rainfall is highest along the coast with 1,310mm at Gosford and decreases westerly. Temperatures are generally mild with the lowest temperature ranges occurring on the coast. The average monthly maximum is 27^0C in January and the lowest at 15^0C at Kulnura in June. The average minimum monthly temperature is the highest on the coast at 19^0C at Nora Head in February and coldest in the valley at Gosford with 4^0C in July (Murphy 1993:3). During summer, the increased rainfall rate and reduced ground cover is reflected in a proportionately higher risk of erosion.

3.6 WATERWAYS

One of the major environmental factors influencing human behaviour is water as it is essential for survival and as such people will not travel far from reliable water sources. In those situations where people did travel far from reliable water, this indicates a different behaviour such as travelling to obtain rare or prized resources and/or trade. Proximity to water not only influences the number of sites likely to be found but also artefact densities. The highest number of sites and the highest density are usually found in close proximity to water and usually on an elevated landform. This assertion is

undisputedly supported by the regional archaeological investigations carried out in the region where by such patterns are typically within 50 metres of a reliable water source.

The main types of water sources include permanent (rivers and soaks), semi-permanent (large streams, swamps and billabongs), ephemeral (small stream and creeks) and underground (artesian). Stream order assessment is one way of determining the reliability of streams as a water source. Stream order is determined by applying the Strahler method to 1:25 000 topographic maps. Based on the climatic analysis (see Section 2.5), the project area will typically experience comparatively reliable rainfalls under normal conditions and thus it is assumed that any streams above a third order classification will constitute a relatively permanent water source.

The Strahler method dictates that upper tributaries do not exhibit flow permanence and are defined as first order streams. When two first order streams meet, they form a second order stream. Where two-second order streams converge, a third order stream is formed and so on. When a stream of lower order joins a stream of higher order, the downstream section of the stream will retain the order of the higher order upstream section (Anon 2003; Wheeling Jesuit University 2002).

Examination of the Catherine Hill Bay 1:25,000 topographic map and nearmap indicates that the project area is situated approximately one-kilometre east of Chain Valley Bay and Kiriganan Creek (3rd order) runs west along the southern border of the project area, flowing into Chain Hill Bay. Thus, the project area may be considered well-resourced in terms of water availability and associated subsistence and medicinal resources along the Creek and in close proximity.

3.7 FLORA AND FAUNA

The availability of flora and associated water sources affect fauna resources, all of which are primary factors influencing patterns of past Aboriginal land use and occupation. The assessment of flora has two factors that assist in an assessment including a guide to the range of plant resources used for food and medicine and to manufacture objects including nets, string bags, shields and canoes which would have been available to Indigenous people in the past. The second is what it may imply about current and past land uses and to affect survey conditions such as visibility, access and disturbances.

European settlers extensively cleared the original native vegetation form the project area and is now dominated by introduced grasses. The drainage throughout the project area would have supported a range of faunal populations including kangaroo, wallaby, goanna, snakes and a variety of birds. A wider variety of resources would have been available in areas to the north and south east where more reliable water would have been available.

3.8 LAND USES AND DISTURBANCES

Based upon archaeological evidence, the occupation of Australia extends back some 40,000 years (Mulvaney and Kamminga 1999) whilst Aboriginal people have been present within the Hunter Valley for at least 20,000 years (Koettig 1987). Although the impact of past Aboriginal occupation on the natural landscape is thought to have been relatively minimal, it cannot simply be assumed that 20,000 years of land use have passed without affecting various environmental variables. The practice of 'firestick farming' whereby the cautious setting of fires served to drive game from cover, provide protection and alter vegetation communities significantly influenced seed germination, thus increasing diversity within the floral community.

Following European settlement of the area in the 1820s, the landscape has been subjected to a range of different modifactory activities including extensive logging and clearing, agricultural cultivation (ploughing), pastoral grazing, residential developments and mining (Turner 1985). The associated high degree of landscape disturbance has resulted in the alteration of large tracts of land and the

cultural materials contained within these areas. The specific project area has been cleared, used for early agricultural activities (ploughing and grazing) and currently contains at least two (2) dwellings, numerous sheds, as well as an automotive repair business and other commercial/industrial use (extractive materials stockpiles and/or earthmoving depot). Numerous tracks and two dams are also present.

Although pastoralism is a comparatively low impact activity, it does result in disturbances due to vegetation clearance and the trampling and compaction of grazed areas. These factors accelerate the natural processes of sheet and gully erosion, which in turn can cause the horizontal and lateral displacement of artefacts. Furthermore, grazing by hoofed animals can affect the archaeological record due to the displacement and breakage of artefacts resulting from trampling (Yorston et al 1990). Pastoral land uses are also closely linked to alterations in the landscape due to the construction of dams, fence lines and associated structures. As a sub-set of agricultural land use, ploughing typically disturbs the top 10-12 centimetres of topsoil (Koettig 1986) depending on the method and machinery used during the process. Ploughing increases the occurrence of erosion and can also result in the direct horizontal and vertical movement of artefacts, thus causing artificial changes in artefact densities and distributions. In fact, studies undertaken on artefact movement due to ploughing (e.g. Roper 1976; Odell and Cowan 1987) has shown that artefact move between one centimetre up to 18 metres laterally depending on the equipment used and horizontal movement. Ploughing may also interfere with other features and disrupt soil stratigraphy (Lewarch and O'Brien 1981). Ploughing activities are typically evidenced through 'ridges and furrows' however a lengthy cessation in ploughing activities dictates that these features may no longer be apparent on the surface.

Whilst the impacts of vehicular movements on sites have not been well documented, based on general observations it is expected that the creation of dirt tracks for vehicle access would result in the loss of vegetation and therefore will enhance erosion and the associated relocation of cultural materials. Dumping of rubbish would have impacted on site through vehicular access (tracks) and movement of surface artefacts through the actual 'dumping' of rubbish.

Excavation works required for dam construction and the laying of infrastructure (water, telephone) would require the removal of soils thus displacing and destroying any cultural materials that may have been present. As fence construction and the erection of telegraph poles require the removal of sols for the holes, this would also have resulted in the disturbance and possible destruction of any cultural materials. All of which result in loss of vegetation and erosion to some extent.

3.9 NATURAL DISTURBANCES

The disturbance of cultural materials can also be a result of natural processes. The patterns of deposition and erosion within a locality can influence the formation and/or destruction of archaeological sites. Within an environment where the rate of sediment accumulation is generally very high, artefacts deposited in such an environment will be buried shortly after being abandoned. Frequent and lengthy depositional events will also increase the likelihood of the presence of well-stratified cultural deposits (Waters 2000:538,540).

In a stable landscape with few episodes of deposition and minimal to moderate erosion, soils will form and cultural materials will remain on the surface until they are buried. Repeated and extended periods of stability will result in the compression of the archaeological record with multiple occupational episodes being located on one surface prior to burial (Waters 2000:538-539). Within the duplex soils artefacts typically stay within the A horizon on the interface between the A and B horizons.

If erosion occurs after cultural material is deposited, it will disturb or destroy sections of archaeological sites even if they were initially in a good state of preservation. The more frequent and severe the episodes of erosional events the more likely it is that the archaeological record in that area will be disturbed or destroyed (Waters 2000:539; Waters and Kuehn 1996:484). Regional erosional events may entirely remove older sediments, soils and cultural deposits so that archaeological material or deposits of a certain time interval no longer exist within a region (Waters and Kuehn 1996:484-485).

The role of bioturbation is another significant factor in the formation of the archaeological record. Post-depositional processes can disturb and destroy artefacts and sites as well as preserve cultural materials. Redistribution and mixing of cultural deposits occur as a result of burrowing and mounding by earthworms, ants and other species of burrowing animals. Artefacts can move downwards through root holes as well as through sorting and settling due to gravity. Translocation can also occur as a result of tree falls (Balek 2002:41-42; Peacock and Fant 2002:92). Depth of artefact burial and movement as a result of bioturbation corresponds to the limit of major biologic activity (Balek 2002:43). Artefacts may also be moved as a result of an oscillating water table causing alternate drying and wetting of sediments, and by percolating rainwater (Villa 1982:279).

Experiments to assess the degree that bioturbation can affect material have been undertaken. In abandoned cultivated fields in South Carolina, Michie (summarised in Balek 2002:42-43) found that over a 100-year period 35% of shell fragments that had been previously used to fertilise the fields were found between 15 and 60 centimetres below the surface, inferred to be as a result of bioturbation and gravity. Earthworms have been known to completely destroy stratification within 450 years (Balek 2002:48). At sites in Africa, conjoined artefacts have been found over a metre apart within the soil profile. The vertical distribution of artefacts from reconstructed cores did not follow the order in which they were struck off (Cahen and Moeyersons 1977:813). These kinds of variations in the depths of conjoined artefacts can occur without any other visible trace of disturbance (Villa 1982:287). However, bioturbation does not always destroy the stratigraphy of cultural deposits. In upland sites in America, temporally-distinct cultural horizons were found to move downwards through the soil as a layer within minimal mixing of artefacts (Balek 2002:48).

3.10 DISCUSSION

The regional environment provided resources, including raw materials, fauna, flora and water, that would have allowed for sustainable occupation of the area. Within the project area, Kiriganan Creek is located along its southern border and would have provided resources that would have allowed for camping at least during times of heavy rain bringing with it, substance and plan resources.

In relation to modern alterations to the landscape, the use of the project area for past agricultural purposes can be expected to have had low to moderate impacts upon the archaeological record. Additional disturbances would have from further clearing and excavation works associated with the dwellings, sheds, dams and associated infrastructure and utilities. Because of the natural and cultural processes discussed above, site integrity cannot be assumed for the project area. However, the existence of in situ cultural materials cannot be ruled out.

4 ETHNO-HISTORIC BACKGROUND

Unfortunately, due to European settlement and associated destruction of past Aboriginal communities, their culture, social structure, activities and beliefs, little information with regards to the early traditional way of life of past Aboriginal societies remains.

4.1 USING ETHNO-HISTORIC DATA

Anthropologists and ethnographers have attempted to piece together a picture of past Aboriginal societies throughout the Hunter Valley. Although providing a glimpse into the past, one must be aware that information obtained on cultural and social practices were commonly biased and generally obtained from informants including white settlers, bureaucrats, officials and explorers. Problems encountered with such sources are well documented (e.g. Barwick 1984; L'Oste-Brown et al 1998). There is little information about who collected information or their skills. There were language barrier and interpretation issues, and the degree of interest and attitudes towards Aboriginal people varied in light of the violent settlement history. Access to view certain ceremonies was limited. Cultural practices (such as initiation ceremonies and burial practices) were commonly only viewed once by an informant who would then interpret what he saw based on his own understanding and then generalise about those practices.

4.2 LAKE MACQUARIE ETHNO-HISTORIC ACCOUNTS

With regard to the written history and records relating to the Lake Macquarie area it was commented in 2002 that "on the whole, Aboriginal people have not rated highly among the interests and concerns of local history, being entirely neglected in many works, badly misunderstood in others" (Roberts, et al, 2002). The first European to make their way to Lake Macquarie, Captain William Reid, made reference to Aboriginal inhabitants he encountered in the area. He described members of the Awabakal tribe, occupying the area from the bank of the Lower Hunter to the southern and western shores of Lake Macquarie. During his journey in 1800 Reid asked the Awabakal people he encountered where he could find coal and was directed to some embedded in the Lake Macquarie headland (Collins, 1804; SMH, 2008). The use of the Lake Macquarie area for a penal colony in the early 1800s meant that local Aboriginal people were often employed as trackers to hunt down escaped convicts, and the terror of Aboriginal attacks were used by the penal colony administrators as propaganda to dissuade desertion (Wallis, 1816; Roberts, 2002). From 1822 to 1826 the land and waterways of the Hunter River were opened to European colonists through the occupation of Crown Land Grants. Conflict between settlers and the Indigenous inhabitants of the area increased at Lake Macquarie in the early 1830s as more colonists came to the region to occupy Crown Land Grants around the lake shores (Blyton, 2002).

The Awabakal territory was described as covering the area from the southern edge of the lower Hunter River, including Lake Macquarie and its surrounds. The other surrounding territories of the region were inhabited by the Worimi, Geawegal, Wonnarua, Darkinung and Kuring-gai Aboriginal groups (Tindale, 1974; Belshaw, 2009). The Awabakal tribe consisted of four clans, being the Pambalong, Ash Island, Kurungbong and Lake Macquarie clans. Each had their own tribal territory, with each clan scattering in search of food and generally only gathering in larger groups on social or ceremonial occasions. The most common size grouping recorded during hunting and food gathering was three or four people, possibly being family groupings (Sokoloff, 1970). After the impacts of European colonisation increased in the area the usual social customs and orders of the Awabakal began to break down, with references to abandonment of initiation practices and the taking up of wearing European clothes noted in 1830s sources (Keary, 2009).

Ethnohistoric information about the Awabakal people within the Lake Macquarie area was recorded by Lancelot Threlkeld, founder of a mission in 1825 for Aboriginal people at Lake Macquarie (Clouten, 1967: 21). Threlkeld referred to the Awabakal diet being predominantly focussed on coastal life at Lake Macquarie, taking advantage of the variety of resources available from the sea. This included food resources such as crayfish, fish and cockles, but further included the hunting of larger sea animals such as porpoise and whale. Tools for hunting were gathered from both land and sea resources (Gunson 1974).

Threlkeld also refers to the fact that the Awabakal people of the Lake Macquarie area were adaptable to changes in conditions. Since they utilised both land and sea resources, if food became scarce at any time, they were able to seek a change in diet. This included, for example, moving from the coast to the mountains to seek alternative sources during times of scarcity. Some of the food resource animals that Threlkeld records the Awabakal people hunting included snakes, lizards, geese, pigeons, witchetty grubs, wild dogs, wild ducks, bandicoots and kangaroos (Gunson 1974: 55).

The Burwood Beach area has been identified as being an important source of stone for tools manufactured and traded by the Awabakal people, and the area was extensively quarried by them. Rhyolitic tuff was a particularly utilised stone from this area; being hard, smooth and fine grained it was used to make sharp-edged tools, including chisels, rasps, scrapers, and gravers. These stone tools were then utilised in the manufacture of wooden implements such as clubs, boomerangs, shields, spear throwers, food and water containers, canoes and paddles (NPWS, 2010). The trade of axe heads from the Awabakal people has been demonstrated as reaching as far inland as Quirindi, showing that extensive trade and communication routes were utilised prior to the European colonisation of the Lake Macquarie area (Kamminga, 2003).

5 ARCHAEOLOGICAL CONTEXT

A review of the archaeological literature of the region, and more specifically the local area and the results of an OEH AHIMS search provide essential contextual information for the current assessment. Thus, it is possible to obtain a broader picture of the wider cultural landscape highlighting the range of site types throughout the region, frequency and distribution patterns and the presence of any sites within the project area. It is then possible to use the archaeological context in combination with the review of environmental conditions to establish an archaeological predictive model for the project area. #

5.1 SUMMARY OF REGIONAL ARCHAEOLOGICAL CONTEXT

The most relevant investigations from across the Lake Macquarie area indicate differing results and observations based on surface visibility and exposure, alterations to the landscape (including mining, industrial and residential development), proximity to water sources and geomorphology. The following summary, is derived from a review of these investigations and provides a regional archaeological context in terms of site location and distribution.

By far, the highest numbers of sites are located within 50 metres of a water source, in particular Lake Macquarie. These sites, shell middens, indicate a wide use of the Lake. The surrounding area includes sites such as artefact scatters, isolated finds, grinding grooves and art and a number of sites in reduced numbers and densities. Raw materials are predominantly chert, tuff (also called indurated mudstone by some), silcrete and quarts. Stone artefacts are predominantly flake pieces, broken flakes, flakes, cores and reduced numbers of tools. Shell types typically identified in shell middens include cockle and oyster with reduced numbers of other species. The vast majority of artefactual material in the region was observed on exposures with good to excellent ground surface visibility. The likelihood of finding artefacts surrounding these exposures is reduced due to poor visibility. The Lake Macquarie regional archaeology of the area can be summarised as follows:

- the likelihood of locating sites increases with proximity to water;
- the likelihood of finding large sites increases markedly with proximity to water;
- a variety of raw materials will be represented though the majority of sites will include tuff/mudstone, chert, silcrete and quartz;
- a variety of artefact types will be located though the majority will be flakes, flaked pieces and debitage;
- grinding grooves will be located along or near water sources;
- shell middens will be present along the fore shore;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area' and
- the majority of sites will be subject to disturbances including human and natural.

5.1.1 SUMMARY OF REGIONAL ARCHAEOLOGICAL PATTERNING

Within the region, a broad range of site types are represented including shell middens, isolated artefacts, artefact scatter, shell middens and grinding grooves. Within the areas covered by the regional studies, the range of available landforms has been sampled and it is evident that site distribution is extremely closely linked to topography, with ridge sides, ridge tops and valley bottoms with access to reliable water exhibiting the highest concentrations of sites.

However, it must be emphasised that the vast majority of the areas assessed by the afore-mentioned regional studies are in a variety of topographic and geological contexts and some vary considerably from the specific project area.

There are a number of factors which affect site location and that are beyond human control. Shelter sites, grinding grooves and engravings are site types typical of the "sandstone country" however, their presence is limited to areas containing suitable sandstone outcrops and therefore such sites are not expected within an alluvial context.

5.2 BCD ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM

MCH note that there are many limitations with an AHIMS search. Firstly, site coordinates are not always correct due to errors and changing of computer systems at BCD over the years that failed to correctly translate old coordinate systems to new systems. Secondly, BCD will only provide up to 110 sites per search, thus limiting the search area surrounding the project area and enabling a more comprehensive analysis and finally, few sites have been updated on the BCD AHIMS register to notify if they have been subject to a s87 or s90 and as such what sites remain in the local area and what sites have been destroyed, to assist in determining the cumulative impacts, is unknown.

In addition to this, other limitations include the number of studies in the local area. Fewer studies suggest that sites have not been recorded, ground surface visibility also hinders site identification and the geomorphology of the majority of NSW soils and high levels of erosion have proven to disturb sites and site contents, and the extent of those disturbances is unknown (i.e. we do not know if a site identified at the base of an eroded slope derived from the upper crest, was washed along the bottom etc: thus altering our predictive modelling in an unknown way). Thus, the BCD AHIMS search is limited and provides a basis only that aids in predictive modelling.

The new terminology for site names including (amongst many) an 'artefact' site encompasses stone, bone, shell, glass, ceramic and/or metal and combines both open camps and isolated finds into the one site name. Unfortunately, this greatly hinders in the predictive modelling as different sites types grouped under one name provided inaccurate data.

A search of the BCD AHIMS register has shown that 20 known Aboriginal sites are currently recorded within three kilometres of the project (Table 5.1). The AHIMs results are provided in Appendix B and the location of sites is shown in Figure 5.1.

Table 5.1 Summary of AHIMS sites

Site type	Frequency	Percent
SHL/AFT	3	15%
TRE	3	15%
SHL	7	35%
AFT	6	30%
restricted	1	5%
Subtotal	**20**	**100%**

Figure 5.1 Approximate location of AHIMS sites

5.3 LOCAL ARCHAEOLOGICAL CONTEXT

All archaeological surveys throughout the local area have been undertaken in relation to environmental assessments for developments. The most relevant investigations indicate differing results and observations based on surface visibility and exposure, alterations to the landscape (including mining, industrial and residential development), proximity to water sources and geomorphology. The reports available from BCD are discussed below and their location illustrated in Figure 5.2.

Figure 5.2 Location of previous assessments

Dallas (1986) completed an archaeological survey of a proposed pipeline route between Gwandalan and Mannering Park. The pipeline was proposed to service the Mannering Park sewage treatment works as an additional part of the Wyong Shire sewerage scheme. The topography of the study area consisted predominantly of dunes in the foreshore areas of Chain Valley Bay and Lake Macquarie. Existing roads, houses, a boat ramp, artificial drainage channels and a reserve had previously disturbed the study area. The closest water sources to the study area were Tiembula Creek and Karignan Creek and vegetation in the area was characterised by medium density woodland impacted by past vegetation clearance. Plant species noted in the area included paperbark, eucalypt and casuarina. No NPWS register search, past report analysis or predictive model were included in this report. The survey identified variable ground surface visibility along the route and one shell midden was identified and is summarised below in the table below.

Table 5.2 Summary of site (Dallas 1986)

Site	Site type	Landform	Distance to water	Stream order	Artefacts /features	Disturbance	Subsurface potential
Tiembula Creek Midden	midden	not provided	not provided	Tiembula Creek	Anadara trapezia shell	highly disturbed	disturbed deposits

Dallas recommended that the proposed works proceed with no further archaeological investigation required for the study area. Due to the proposed impacts to the one identified site it was recommended that a Consent to Destroy permit be sought for partial destruction of the identified midden site, covering that section of it that would be impacted by the pipeline works.

Heritage Concepts (2006) undertook an archaeological assessment of an area proposed for a gas pipeline forming part of the larger Munmorah Gas Turbine Facility Project at Munmorah Power Station. The survey covered two possible gas pipeline routes (routes 2 and 3) following the revision of a previously surveyed route at an earlier stage of the project. Route 2 started in swamp land on the Delta property, crossed the Pacific Highway then followed the alignments of Wyee Road and later the Sydney-Newcastle train line. Route 3 followed an existing ash slurry pipeline through swamp areas, crossed the Pacific Highway then followed the alignment of Wyee Road, then Bushell's Ridge Road. The topography consisted of a low lying terrain of low rises, alluvial plains, dune-fields and coastal lake systems. Numerous creeks and their tributaries were noted in the including Wallarah Creek, Spring Creek and Colongra Creek. Vegetation identified within the region included lillipilli, native cherry, blueberry ash, geebung and water fringe plants such as rushes, all of which were useful food resources for Aboriginal populations. Other vegetation types included banksia, casuarina and scribbly gum. A search of the AHIMS database identified 72 sites located within a 29 by 15 kilometre area surrounding the proposed pipeline routes. Site types included open camp sites, middens, modified tree, ochre quarry, water hole, fish trap, burial, open camp site/scarred tree, midden/ochre quarry, ritual site, isolated finds, axe grinding grooves, shelter with art and shelter with art/deposit. The site types that were predicted to occur within the study area included rock engravings, grinding grooves, occupation sites, burial sites, quarry sites and modified trees. No sites were identified during the survey, however five PADs (refer to Table 5.3) were identified, leading to an overall designation of the study area into sections of low archaeological potential and sections of moderate archaeological potential. The site types predicted were not encountered during the survey, however vegetation cover and limited ground surface visibility could account for the fact that no sites were identified. It was noted that very poor ground surface visibility was present across the entirety of the study area.

Table 5.3 Summary of PADs (Heritage Concepts 2006)

PAD	Landform	Water source	Disturbance	Potential
Transect 2	swamp margin		low – NW end	moderate
Transect 3	swamp margin		low	moderate
Transect 15	swamp margin		low	moderate
Transect 10	terrace overlooking swamp	nearby swamp	low	moderate
Transect 14	terrace overlooking swamp	nearby swamp	low	moderate

It was recommended that the areas marked as having moderate archaeological potential (incorporating the five PADs) be subject to preliminary archaeological testing. In the event that any Aboriginal cultural material be encountered outside the identified PADs during works it was recommended that works cease and the appropriate authorities notified.

5.4 LOCAL & REGIONAL CHARACTER OF ABORIGINAL LAND USE & ITS MATERIAL TRACES

The site types identified throughout the area appear to be either low density/small occupation activities or sites that were associated with more secular activities. The broader landform assessment also suggests that larger sites indicative of larger camping groups may be located along Lake Macquarie fore shore due to available room and proximity to readily available resources of the lake. Other unsuitable locations, such as steep slopes, would have been limited in space and have uneven surfaces where by large scale habitation is not possible, but may have been utilised as activity areas away from the main camp. Based on information gained from previous studies, both regionally and locally, within a three-kilometre radius of the project area, it can be expected that:

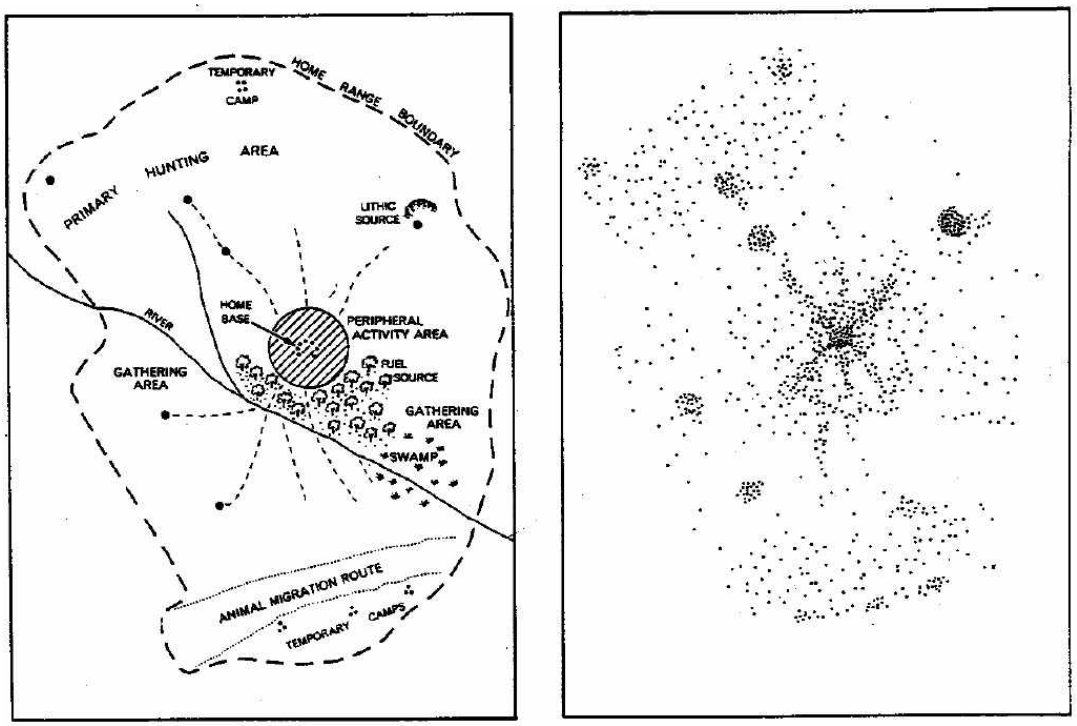
- the likelihood of locating sites increases with proximity to available water; either creeks/rivers or Lake Macquarie;
- the likelihood of finding large sites increases markedly with proximity to reliable water;
- grinding grooves will be located along or near water sources;
- a variety of stone artefact types will be located though the majority will be flakes, flaked pieces and debitage;
- a variety of raw materials utilised in stone tool manufacture will be represented, though the majority of sites will be predominated by tuff/mudstone, chert and silcrete;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area; and
- the majority of sites will be subject to disturbances including human and natural.

5.5 MODELS OF PAST ABORIGINAL LAND USE

The main aim of this project is to attempt to define both the nature and extent of occupation across the area. As a result, the nature of the analysis will focus on both the landform units and sites. The purpose of this strategy is to highlight any variations between sites and associated assemblages, landforms and resources across the area treating assemblages as a continuous scatter of cultural material across the landscape. In doing this, it is possible to identify variation across the landscape, landforms and assemblages that correspond with variation in the general patterns of landscape use and occupation. Thus, the nature of activities and occupation can be identified through the analysis

of stone artefact distributions across a landscape. A general model of forager settlement patterning in the archaeological record has been established by Foley (1981). This model distinguishes the residential 'home base' site with peripheral 'activity locations'. Basically, the home base is the focus of attention and many activities and the activity locations are situated away from the home base and are the focus of specific activities (such as tool manufacturing). This pattern is illustrated in Figure 5.3. Home base sites generally occur in areas with good access to a wide range of resources (reliable water, raw materials etc). The degree of environmental reliability, such as reliable water and subsistence resources, may influence the rate of return to sites and hence the complexity of evidence. Home base sites generally show a greater diversity of artefacts and raw material types (which represent a greater array of activities performed at the site and immediate area). Activity locations occur within the foraging radius of a home base camp (approximately 10 km); (Renfrew and Bahn 1991). Based on the premise that these sites served as a focus of a specific activity, they will show a low diversity in artefacts and are not likely to contain features reflecting a base camp (such as hearths). However, it is also possible that the location of certain activities cannot be predicted or identified, adding to the increased dispersal of cultural material across the landscape. If people were opting to carry stone tools during hunting and gathering journeys throughout the area rather than manufacturing tools at task locations, an increased number of used tools should be recovered from low density and dispersed assemblages.

Figure 5.3 Foley's model (L) and its manifestation in the archaeological record (R), (Foley 1981).



5.5.1 MODEL OF OCCUPATION FOR THE LOCAL AREA

Work in the region has aimed to understand the nature of Aboriginal occupation and determine the nature of land use. This theme often aims to identify and explain archaeological patterning in site type, content and distribution. General theories have been developed outlining the relationship between land use patterns and the resulting archaeological evidence. A number of models developed have been reviewed (Koettig 1994; Dean-Jones and Mitchell 1993; Rich 1995; Kuskie and Kamminga 2000) and the most commonly accepted model is summarised below.

Kuskie and Kamminga (2000) established a general model of occupation strategies based primarily upon ethnographic research. Used as a starting point, it makes a general set of predictions that is consistent with other studies (e.g. Nelson 1991). The model distinguishes between short-term or extended long-term occupation and makes some predictions about the likely location of different foraging and settlement activities. Combining this information with a general review of assemblage contents from a sample of excavated sites, a baseline of settlement activities may be determined (Barton 2001). The model provides a number of archaeological expectations that may be tested. For example, the presence of features requiring a considerable labour investment such as stone-lined ovens or heat-treatment pits are likely to occur at places where occupation occurred for extended periods of time. The presence of grindstones is also a reliable indicator of low mobility and extended occupation. Seed grinding requires a large investment of time and effort (Cane 1989). In most ethnographic examples, seed grinding is an activity that takes place over an entire day to provide adequate energetic returns (Cane 1989; Edwards and O'Connell 1995). Where group mobility was high and campsites frequently shifted throughout the landscape, artefact assemblages are not expected to contain elements such as grindstones, heat-treatment pits, ovens and the diversity of implements frequently discarded at places of extended residential occupation. It may also have been the case that the location of particular activities could not be predicted by tool users, adding to the increased low-density scattering of artefacts over the landscape. Also, if individuals were opting to carry a number of stone tools during hunting and gathering activities and maintaining these tools rather than manufacturing new tools at each task location, the ratio of used tools to unworn flakes in these assemblages should be high. Table 5.4 has been adapted from Kuskie and Kamminga (2000).

Table 5.4 Site descriptions (Kuskie & Kamminga 2000).

Occupation pattern	Activity location	Proximity to water	Proximity to food	Archaeological expectations
Transitory movement	all landscape zones	not important	not important	• assemblages of low density & diversity • evidence of tool maintenance & repair • evidence for stone knapping
Hunting &/or gathering without camping	all landscape zones	not important	near food resources	• assemblages of low density & diversity • evidence of tool maintenance & repair • evidence for stone knapping • high frequency of used tools
Camping by small groups	associated with permanent & temporary water	near (within 100m)	near food resources	• assemblages of moderate density & diversity • evidence of tool maintenance & repair • evidence for stone knapping & hearths
Nuclear family base camp	level or gently undulating ground	near reliable source (within 50m)	near food resources	• assemblages of high density &diversity • evidence of tool maintenance & repair & casual knapping • evidence for stone knapping • heat treatment pits, stone lined ovens • grindstones
Community base camp	level or gently undulating ground	near reliable source (within 50m)	near food resources	• assemblages of high density & diversity • evidence of tool maintenance & repair & casual knapping • evidence for stone knapping • heat treatment pits, stone lined ovens • grindstones & ochre • large area >100sqm with isolated camp sites

To identify the specific activity areas through analysis of the composition of patterning of lithic assemblages, is utilised. However, this is applied to excavated materials as they provide more realistic data due to the lesser degree of disturbances, removal and breakages.

5.6 PREDICTIVE MODEL FOR THE PROJECT AREA

Due to issues surrounding ground surface visibility and the fact that the distribution of surface archaeological material does not necessarily reflect that of sub-surface deposits, it is essential to establish a predictive model. An archaeological predictive model is established to identify areas of archaeological sensitivity so it can be used as a basis for the planning and management of Aboriginal heritage. It involves reviewing existing literature to identify basic site distribution patters. These patterns are then modified according to the specific environment of the project area to form a predictive model for site location within the specific project area. A sampling strategy is then used to test the model and the results of the survey used to confirm, refute or modify the model.

Land-systems and environmental factors are commonly used factors in predictive modelling based on the assumption that they provide distinctive sets of constraints and opportunities that influenced past Aboriginal land use patterns. As land use patterns may differ between zones (due to different environmental conditions), this may result in the physical manifestation of different spatial distributions and forms of archaeological evidence. The predictive model presented here is based on the landform units, previous archaeological assessments conducted within the region, distribution of known sites and site densities and traditional Aboriginal land use patterns. Also taken into consideration are land use impacts (both natural and anthropomorphic) that may have resulted in a disturbed landscape and associated archaeological record. However, these assumptions may only be clarified during survey and the model updated accordingly if needed.

Previous archaeological studies undertaken throughout the region, the BCD AHIMS register and the environmental context provide a good indication of site types and site patterning in the area. This research has shown that occupation sites (artefact scatters and isolated finds) are the most frequently recorded site type and are commonly located along or adjacent to watercourses, and on relatively flat to gently sloping topography in close proximity to reliable water. Sites with higher artefact densities are similarly concentrated within fifty metres of watercourses. Within the local area, previous assessments within a similar environmental context indicate that, within a well-watered context, there is high potential for archaeological material to be present on level, typically well-elevated landforms that provide ready access to low-lying waterlogged areas and the associated resources.

Within the project area it is predicted that there is a high potential for evidence of past Aboriginal land use along Kiriganan Creek. It is anticipated that sites will be within 50 metres of the creek, will include artefact scatters or isolated finds and will contain assemblages dating from the mid to late Holocene, featuring tuff as the dominant raw material, with lesser quantities of quartz, chert, and other raw materials. Artefacts will consist predominantly of flaked pieces, flakes, broken flakes and cores. Some modified artefacts including retouched flakes, and asymmetrical and symmetrical backed artefacts can be expected. Dependent on the level of exposure within the project area, the sites are expected to be located within the disturbed context of erosion scars and within the remnant soil horizon, and whilst it is possible that sub-surface deposits will be present within parts of the project area, this is entirely reliant on the level of disturbance across the site. It must be emphasised that sites within the project area are expected to have been disturbed by both natural and human disturbances. Therefore, the accuracy of these predictions will be largely determined by the degree of such disturbances.

5.7 ARCHAEOLOGICAL POTENTIAL IN THE PROJECT AREA

Based on archaeological sites registered in the region and the results of past archaeological studies, two sites types are likely to occur throughout the project area:

- **Artefact scatters**

Also described as open campsites, artefact scatters and open sites, these deposits have been defined at two or more stone artefacts within 50 metres of each other and will include archaeological remains such as stone artefacts and may be found in association with camping where other evidence may be present such as shell, hearths, stone lined fire places and/or heat treatment pits. These sites are usually identified as surface scatters of artefacts in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing, grazing) and access ways can also expose surface campsites. Artefact scatters may represent evidence of;

- Large camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of such tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- Medium/small camp sites, where activities such as minimal tool manufacturing occurred;
- Hunting and/or gathering events;
- Other events spatially separated from a camp site, or
- Transitory movement through the landscape.

Artefact scatters are a common site type in the locality and the broader region. There is potential for artefact scatters to occur within the project area in areas close to the confluence and along the tributary. There is also the potential for such sites to be impacted on through past land uses.

- **Isolated finds**

Isolated artefacts are usually identified in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing) and access ways can also expose surface artefacts. Isolated finds may represent evidence of;

- Hunting and/or gathering events; or
- Transitory movement through the landscape.

Isolated finds are a common site type in the locality and the broader region. There is potential for isolated artefacts to occur across the project area and across all landforms. There is also the potential for such sites to be impacted on through past land uses.

5.8 HERITAGE REGISTER LISTINGS

The National Heritage List, the Commonwealth Heritage List, the Australian Heritage Database, Australia's National Heritage List, The National Trust Heritage Register State Heritage Inventory the and the Central Coast Local Environmental Plan have no Aboriginal objects, sites or places listed.

6 RESULTS

6.1 METHODOLOGY

The survey areas were surveyed on foot by the in accordance with the proposed methodology provided to the stakeholders for review. The survey focused on areas of high ground surface visibility and exposures (erosional features, creek banks, tracks, cleared areas, dams).

6.2 LANDFORMS

McDonald et al (1998) describes the categories of landform divisions. This is a two layered division involving treating the landscape as a series of 'mosaics'. The mosaics are described as two distinct sizes: the larger categories are referred to as landform patterns and the smaller being landform elements within these patterns. Landform patterns are large-scale landscape units, and landform elements are the individual features contained within these broader landscape patterns. There are forty landform pattern units and over seventy landform elements. However, of all the landform element units, ten are morphological types. For archaeological investigations they divide the landscape into standardised elements that can be used for comparative purposes and predictive modelling. As outlined in Section 3, the project area includes three landforms: slopes and a 3rd order creek.

6.3 SURVEY UNITS

For ease of management, the project area was divided into 2 Survey Units (SUs) that were based on landforms and included up to 20 metres in width along Kiriganan Creek (3rd order) and the reminder of the project t area which consisted of a gentle south facing slope.

Survey Unit 1

This survey unit the creek along the southern boundary of the project area. Vegetation was extremely dense with very low visibility. Vegetation included closed bushland, shrubs and lantana. An example of this survey unit is provided in Figure 6.1.

Survey Unit 2

This survey unit included the remainder of the project area and consisted of a gentle south facing slope. Two houses are located at the north, a work shed/garage in the north west, the garage and caravan storage are located along the western boundary, a house and sheds in the centre of the project area and two large dams. Additionally, there are tracks, excavated areas throughout, rubbish stockpiles and infrastructure. Vegetation is predominantly pasture grass with some scattered trees and bushland in the south. Visibility was poor and exposures moderate. An example of this survey unit is provided in Figure 6.1.

Figure 6.1 Examples of the project area

6.4 EFFECTIVE COVERAGE

To determine the effectiveness of an archaeological survey, the visibility and exposure conditions for each survey unit is calculated to provide an effective coverage amount. Effective coverage is an estimate of the amount of ground observed considering local constraints on site discovery such as vegetation and leaf litter and erosion. There are two components to determining the effective coverage: visibility and exposure.

Visibility is the amount of bare ground on the exposures which may reveal artefacts or other cultural materials, or visibility refers to 'what conceals'. Visibility is hampered by vegetation, plant or leaf litter, loose sand, stony ground or introduced materials (such as rubbish) On its own, visibility is not a reliable factor in determining the detectability of subsurface cultural materials (DECCW 2010/783:39).

The second component in establishing effective coverage is exposure. Exposure refers to 'what reveals'. It estimates the area with a likelihood of revealing subsurface cultural materials rather than just an observation of the amount of bare ground. Exposure is the percentage of land for which

erosion and exposure is sufficient to reveal cultural materials on the surface (DECCW 2010/783:37). The effective coverage for the project area was determined for both visibility and exposure ratings and Table 6.1 details the visibility rating system used.

Table 6.1 Ground surface visibility rating

Description	GSV rating %
Very Poor – heavy vegetation, scrub foliage or debris cover, dense tree of scrub cover. Soil surface of the ground very difficult to see.	0-9%
Poor – moderate level of vegetation, scrub, and / or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blowouts etc, in isolated patches. Soil surface visible in random patches.	10-29%
Fair – moderate levels of vegetation, scrub and / or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal, stock tracks, unsealed walking tracks, erosion, blow outs etc, soil surface visible as moderate to small patches, across a larger section of the project area.	30-49%
Good – moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blowouts, recent ploughing, grading, clearing.	50-59%
Very Good – low levels of vegetation / scrub cover. Higher incidence of soil surface visible due to recent or past land-use practices such as ploughing, mining etc.	60-79%
Excellent – very low to non-existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent land use practices, such as ploughing, grading, mining etc.	80-100%
Note: this process is purely subjective and can vary between field specialists, however, consistency is achieved by the same field specialist providing the assessment for the one project area/subject site.	

As indicated in Table 6.2, the effective coverage for project area is 20.50% with grass being the limiting factor and bushland to the south.

Table 6.2 Effective coverage for the investigation area

SU	Landform	Area (m2)	Vis. %	Exp. %	Exposure type	Previous disturbances	Present disturbances	Limiting visibility factors	Effective coverage (m2)
1	slope	500	50%	80%	dams, tracks, erosion	agriculture, grazing, dams, structures	grazing, housing, mechanic	grass, bush	200
2	creek	500	5%	20%	erosion	clearing	erosion	grass, bush	5
Totals		**1,000**							**205**
								Effective coverage %	**20.50%**

The level and nature of the effective survey coverage is considered satisfactory to provide an effective assessment of the investigation area. The coverage was comprehensive for obtrusive site types (e.g. grinding grooves and scarred trees) but somewhat limited for the less obtrusive surface stone artefact sites by surface visibility constraints that included vegetation cover and minimal exposures. In view of the predictive modelling and the results obtained from the effective coverage, it is concluded that the survey provides a valid basis for determining the probable impacts of the proposal and formulating recommendations for the management of the identified sites and potential Aboriginal sites.

6.5 ARCHAEOLOGICAL SITES

No sites were identified in the project area during the survey and this is likely due to the impacts from previous works associated with clearing, ploughing, grazing and construction works associated with house, dwelling and shed construction as well as fencing, tracks and dams.

6.6 POTENTIAL ARCHAEOLOGICAL DEPOSIT (PAD)

The terms 'Potential Archaeological Deposit (PAD)' and 'area(s) of archaeological sensitivity' are used to describe areas that are likely to contain sub-surface cultural deposits. These sensitive landforms or areas are identified based upon the results of fieldwork, the knowledge gained from previous studies in or around the subject area and the resultant predictive models. Any or all of these attributes may be used in combination to define a PAD. The likelihood of a landscape having been used by past Aboriginal societies and hence containing archaeologically sensitive areas is primarily based on the availability of local natural resources for subsistence, artefact manufacture and ceremonial purposes. The likelihood of surface and subsurface cultural materials surviving in the landscape is primarily based on past land uses and preservation factors.

Given the known extent and content of sites typically situated along the reliable water courses, and given that the area along Kiriganan Creek appears to remain relatively undisturbed, the area along the creek, up to 50 metres in width, has potential to contain evidence of past Aboriginal land use. This area is identified as a PAD (Figure 6.2) and extends south outside the project area.

Figure 6.2 Location of the identified PAD

6.7 DISCUSSION

Considering the environmental, cultural and archaeological contexts of the regional and local area, the distribution of archaeological sites may be identified and thus effectively protected, manage lands, and conserve areas where required and appropriate.

As no sites have been identified, the results of the investigation are discussed below in terms of overall site integrity, local and regional contexts, and predictive modeling.

6.7.1 INTEGRITY

The integrity of the study area can be assessed only for surface integrity through the consideration of past and present land uses and their impacts. Subsurface integrity can only be assessed through controlled excavation that allows for the examination of both the horizontal and vertical distribution of cultural materials (caused by natural and/or human impacts) and by conjoining artefacts. Land uses and their impacts(clearing, ploughing, grazing, construction for structures and dams), as well as natural impacts (bioturbation, erosion, flooding), within the project area are considered to be moderate to high throughout the slope (excluding the southern bushland area) and due to such disturbances, the integrity of the project area is disturbed and any sites that may have been present would have been disturbed or destroyed. The exception to this is the southern bushland area that appears to remain relatively undisturbed.

6.8 INTERPRETATION & OCCUPATION MODEL

Given the fact that no sites identified, it is not possible to discuss site interpretation or occupation models.

6.9 REGIONAL & LOCAL CONTEXT

Given the fact that no sites identified, it is not possible to discuss the regional or local archaeological contexts.

6.10 REASSESSMENT OF THE PREDICTIVE MODEL

Given the fact that no sites were identified and the project rea is highly disturbed, it is not possible to reassess the predictive model.

6.11 CONCLUSION

Sites provide valuable information about past occupation, use of the environment and its specific resources including diet, raw material transportation, stone tool manufacture, and movement of groups throughout the landscape. Previous broad-based regional research has shown that proximity to water was an important factor in past occupation, with sites reducing in number significantly away from water. This research has also shown that occupation sites (artefact scatters and isolated finds) are the most frequently recorded site type and are commonly located along or adjacent to watercourses, and on relatively flat elevated landforms in close proximity to reliable fresh water. Sites with higher artefact densities are similarly concentrated within fifty metres of watercourses and throughout the wider landscape, a background scatter of artefacts is present and represent hunting and gathering or travel.

Kiriganan Creek (3rd order) is located along the southern boundary of the project area. Thus, the southern portion of the project area may be considered reasonably resourced in terms of water

availability during wet seasons or after continuous heavy rain when water was available and associated subsistence and medicinal resources. The remainder of the project area was likely to have been utilised for more transitory activities associated with any camping along the creek such as hunting and gathering. Such evidence manifests in the archaeological record as a background scatter od discarded artefacts. As the slopes had been previously cleared, ploughed and grazed as well as significant impacts for excavation works associated with the numerous structures and dams, these past disturbances would also have impacted on any cultural heritage that may have been present. This is consistent with the predictive model and there is little to no potential for in situ cultural materials to be present in the open pasture slope areas. The creek line, and up to 50 metres in width, being a suitable location for past Aboriginal land use, is likely to contain evidence of past Aboriginal land use which is also consistent with the predictive model and has been identified as a PAD.

7 ASSESSMENT OF IMPACTS

The archaeological record is a non-renewable resource that is affected by many processes and activities. As outlined in Section 3 and 6, the various natural processes and human activities would have impacted on archaeological deposits through both site formation and taphonomic processes. Chapter 4 describes the impacts within the project area, showing how these processes and activities have disturbed the landscape and associated cultural materials in varying degrees.

7.1 IMPACTS

Detailed descriptions of the impacts are provided in Section 1.5 and the results of the survey in Section 6. The BCD Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (2010:21) describes impacts to be rated as follows:

1) Type of harm: is either direct, indirect or none

2) Degree of harm is defined as either total, partial or none

3) Consequence of harm is defined as either total loss, partial loss, or no loss of value

As no sites were identified during the survey and the identified disturbed landscape due to previous landuses, there are no impacts on the archaeological record.

The exception to this is the southern bushland area that has been identified as a PAD. As it remains unknown if sites are present within the PAD at this stage, the impacts to the archaeological record in the southern bushland area remain unknown.

8 MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies, as outlined through the DECCW (2010b) Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b), the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), and the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010c), are considered below for the management of the identified site within the project area.

One of the most important considerations in selecting the most suitable and appropriate strategy is the recognition that Aboriginal cultural heritage is very important to the local Aboriginal community. Decisions about the management of sites and potential archaeological deposits should be made in consultation with the appropriate local Aboriginal community.

8.1 CONSERVATION/PROTECTION

The BCD is responsible for the conservation/protection of Indigenous sites and they therefore require good reason for any impact on an indigenous site. Conservation is the first avenue and is suitable for all sites, especially those considered high archaeological significance and/or cultural significance. Conservation includes the processes of looking after an indigenous site or place so as to retain its cultural significance and are managed in a way that is consistent with the nature of peoples' attachment to them.

As no sites have been identified and the project area is disturbed through previous works across the project area, conservation/protection is not required.

The southern bushland portion appears to remain relatively undisturbed and has been identified as a PAD, providing an opportunity to protect the PAD area. If protection is not possible, the area will be reassessed following further investigations (Section 8.2).

8.2 FURTHER INVESTIGATION

An Aboriginal Heritage Impact Permit (AHIP) is no longer required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW). Subsurface testing is appropriate when a Potential Archaeological Deposit (PAD) has been identified, and it can be demonstrated that sub-surface Aboriginal objects with potential conservation value have a high probability of being present, and that the area cannot be substantially avoided by the proposed activity. However, testing may only be undertaken as per the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2011) and discussions/consultation with the local Aboriginal community.

If the identified PAD will be impacted upon, test excavations will be required for the PAD prior to works commencing in the PAD.

8.3 AHIP

If harm will occur to an Aboriginal object or Place, then an AHIP is required form the BCD. If a systematic excavation of the known site could provide benefits and information for the Aboriginal community and/or archaeological study of past Aboriginal occupation, a salvage program may be an appropriate strategy to enable the salvage of cultural objects. The AHIP may also include surface collection of artefacts.

As no sites have been identified and the project area, an AHIP is not required.

9 RECOMMENDATIONS

9.1 GENERAL

1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974; and

2) Should any Aboriginal objects be uncovered during works, all work will cease in that location immediately and the Environmental Line contacted.

9.2 PAD

3) If the identified PAD will be impacted upon by any future development an archaeological subsurface investigation will be required in the PAD area in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW.

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APPENDIX A

Aboriginal Stakeholder Consultation

Date	Consultation type	OEH requirement	Consult stage	RAP/Agency	Contact person	Description
2/8/19	Letter	4.1.2	1	MCH contacted Biodiversity and Conservation Division (BCD)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted Darkinjung Local Aboriginal Land Council (DLALC)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted Registrar of Aboriginal Owners (RAO)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted Central Coast Council (CCC)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted Native Title Tribunal (NNTT)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted NTSCORP Ltd		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
2/8/19	Letter	4.1.2	1	MCH contacted Hunter Local Land Services (HLLS)		Letter (and amended letter) to identify Aboriginal parties. Requested response no later C.O.B. 16/8/2019
5/8/19	email	4.1.2	1	HLLS		Thanked MCH for the letter
7/8/19	Letter/e-mail	4.1.2	1	RAO		Identified Aboriginal parties: DLALC
7/9/19	Letter/e-mail	4.1.2	1	NNTT		No claims
NA		4.1.2	1	DLALC		No response
NA		4.1.2	1	CCC		No response
NA		4.1.2	1	NTSCORP	Do not provide lists of possible stakeholders	
16 August 2019 C.O.B. Request for groups to consult with closed						
19/8/19	email	4.1.7, 4.1.8	1	DLALC		Registered for the project
22/8/19	Letter & email	4.1.2	1	BCD		Identified Aboriginal parties: 39
22/8/19	Letter & email	4.1.3, 4.1.4, 4.1.5, 4.2.1	1	All RAPs	those provided from sources above	Formal letter to identified RAPs. Letter requested registration of interest in the project, project outline, maps and asking for the preferred method to receive information (meeting/mail/email). Required registration by C.O.B 4/9/2019
28/8/19		4.1.7, 4.1.8	1	Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Registered for the project
30/8/19	Public notice	4.1.3	1	All registered Aboriginal parties (RAPs)		Public notice in Central Coast Advocate and requested registration no later than 12/9/2019
4 September 2019 C.O.B. Registration for project closed						

Date	Consultation type	OEH requirement	Consult stage	RAP/Agency	Contact person	Description
5/9/19	letter	4.2.1, 4.2.2, 4.2.3, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7	2 & 3	All RAPs		Formal letter and information packet sent to 4 identified RAPs. Information packet included project outline, project area, critical timelines, impacts, brief cultural, environmental and archaeological context, proposed methods of investigation, proposed methods of gathering cultural knowledge, and maps. A response the proposed methodology was required registration by C.O.B. 2/10/20149
2nd October 2019 C.O.B. Response to information packet closed (no response)						
8/10/19	Letter		3	All RAPs		All RAPs sent a letter of invitation to attend and participate in the survey and test excavation if required on 17/10/2019
17th October 2019 Survey						
20/10/19		4.3.5; 4.3.6; 4.3.7 4.4.1; 4.4.2; 4.4.3	3 & 4	All RAPs		Draft report, sent to all RAPs for review
18th November 2019 C.O.B. Response to Draft Report Closed						
		4..4.4; 4.4.5	4	All RAPs		Final report sent to all RAPs
No response						
18th November 2019 C.O.B. Assessment Complete						

McCARDLE
CULTURAL HERITAGE

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Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

2 August 2019

Sir/Madam
NTSCORP Limited
information@ntscorp.com.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 25 Mulloway Road, Chain Valley Bay

MCH have been engaged by Vivacity Property Pty Ltd (Level 54, Governor Phillip Tower, 1 Farrer Place, Sydney, NSW 2000) to undertake an Aboriginal Cultural Heritage Assessment and prepare an Aboriginal Heritage Impact Permit (AHIP) application if required for a proposed manufactured home estate located at 25 Mulloway Road, Chain Valley Bay, Central Coast Local Government Area (LGA).

As per the Biodiversity and Conservation Division (BCD) formerly the Office of Environment and Heritage (OEH) policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, (Stage 1, s4.1.1 to 4.1.2), MCH and the proponent are seeking community consultation with indigenous knowledge holders relevant to the project area who can determine the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Location of the project area

In order to comply with the BCD policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, in particular Stage 1 (s4.1.2) - we are writing to advise you of the proposal and ask whether you could provide details of any Aboriginal groups or individuals that your organisation is aware of who may have an interest in the investigation area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Should you have this information, we request that you provide the names and contact details of these Aboriginal people/organisations, in writing, to the undersigned either via written correspondence or email (mcheritage@iprimus.com.au) within 14 working days of receipt of this letter.

Please note that in order to adhere to time constraints, and the minimal time requirements as stead in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, the absence of a response by the prescribed timeline, will be taken by the proponent as your indication that your organisation is not aware of any such interested parties.

Should you wish to discuss this matter, please do not hesitate to contact me on 0412 702 396.

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

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2 August 2019

Sir/Madam
Biodiversity and Conservation Division (Archaeology)
rog.hcc@environment.nsw.gov.au

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2 August 2019

Sir/Madam
Hunter Local Land Services
admin.hunter@lls.nsw.gov.au

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2 August 2019

Sir/Madam
National Native Title Tribunal
GeospatialSearch@NNTT.gov.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 25 Mulloway Road, Chain Valley Bay

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Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

National Native Title Tribunal

Request for Search of Tribunal Registers

Search for overlapping interests i.e.: Is there a native title claim, determination or land use agreement over this land?
Please note: the NNTT cannot search over freehold land.
For further information on freehold land: Click Here (NNTT website)

1. Your details

NAME:	Penny McCardle
POSITION:	Archaeologist
COMPANY/ORGANISATION:	McCardle Cultural Heritage Pty Ltd
POSTAL ADDRESS:	PO Box 166, Adamstown NSW 2289
TELEPHONE:	0412 702 396
EMAIL:	mcheritage@iprimus.com.au
YOUR REFERENCE:	Chain Valley Bay
DATE OF REQUEST:	2/8/2019

2. Reason for your request

Are you a party to a native title proceeding? ☐ Yes ☐ No

Please provide Federal Court/Tribunal file number/or application name: _____

OR

Do you need to identify existing native title interests to comply with the *Native Title Act 1993* (Cth) or other State/Territory legislation? ☐ Yes ☐ No

Please provide brief details of these obligations here: OEH requirements

3. Identify the area to be searched

If there is insufficient room below, please send more information on a Word or Excel document.

Mining tenure

State/Territory: NSW

Tenement ref/s: _____

OR

Crown land / non-freehold tenure

Tenure type: ☐ Lease ☐ Reserve or other Crown land

State/Territory: _____

Lot and plan details: _____

Pastoral Lease number or name: _____

Other details: (Town/County/Parish/ Section/Hundred/Portion): _____

Email completed form to: GeospatialSearch@nntt.gov.au

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

2 August 2019

Sir/Madam
Darkinjung Local Aboriginal Land Council
darkinjung@dlalc.org.au

Dear Sir/Madam,

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2 August 2019

Sir/Madam
Central Coast Council
ask@centralcoast.nsw.gov.au

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2 August 2019

Sir/Madam
Office of the Registrar, Aborigianl Land Rights Act 1983
jodie.rikiti2@oralra.nsw.gov.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 25 Mulloway Road, Chain Valley Bay

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2 August 2019

Sir/Madam
NTSCORP Limited
information@ntscorp.com.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

MCH sent an email earlier today regarding the above-named Project. The address was incorrect and is actually **45 Mulloway Road, Chain Valley Bay not No. 25.**

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

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admin.hunter@lls.nsw.gov.au

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2 August 2019

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Darkinjung Local Aboriginal Land Council
darkinjung@dlalc.org.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

MCH sent an email earlier today regarding the above-named Project. The address was incorrect and is actually **45 Mulloway Road, Chain Valley Bay not No. 25.**

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

2 August 2019

Sir/Madam
Central Coast Council
ask@centralcoast.nsw.gov.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

MCH sent an email earlier today regarding the above-named Project. The address was incorrect and is actually **45 Mulloway Road, Chain Valley Bay not No. 25.**

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PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

2 August 2019

Sir/Madam
Office of the Registrar, Aborigianl Land Rights Act 1983
jodie.rikiti2@oralra.nsw.gov.au

Dear Sir/Madam,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural Heritage Consultation requirements for proponents 2010 (Stage 1)– Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

MCH sent an email earlier today regarding the above-named Project. The address was incorrect and is actually **45 Mulloway Road, Chain Valley Bay not No. 25.**

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Penny McCardle

From: Jess Wegener <jess.wegener@lls.nsw.gov.au>
Sent: Monday, 5 August 2019 11:32 AM
To: mcheritage@iprimus.com.au; Carol Proctor; bahtabahkentan@hotmail.com
Cc: Toby Whaleboat
Subject: Fwd: amendement to previous letter
Attachments: image006.jpg

Hi Penny Kenton and Aunty Carol

Thank you for your correspondence Penny,

Aunty Carol and Kenton please see attached BCD Aboriginal Cultural Heritage Consultation requirements for proponent in your area,

Aunty Carol, please let me know if you need the list of other registered parties in your area

Jess Wegener | SLSO Aboriginal Communities Officer
Natural Resources Management
Hunter Local Land Services | Healthy Landscapes
816 Tocal Road | PATERSON | NSW 2421
M: 0429 426 257 | T: (02) 4938 4946 |
E: jess.wegener@lls.nsw.gov.au
W: www.hunter.lls.nsw.gov.au : www.facebook.com/HunterLLS

I pay my respects to all First Nations people of the lands in which i work and acknowledge their long connections to the land we are on and extend that respect to all custodians today.

---------- Forwarded message ---------
From: **Admin Hunter** <admin.hunter@lls.nsw.gov.au>
Date: Fri, Aug 2, 2019 at 5:02 PM
Subject: Fwd: amendement to previous letter
To: Jess Wegener <jess.wegener@lls.nsw.gov.au>, Toby Whaleboat <toby.whaleboat@lls.nsw.gov.au>

Regards

Hunter Local Land Services
816 Tocal Rd | Private Bag 2010 | Paterson NSW 2421 |
t: 1300 795 299 | f: (02) 4930 1013
e: admin.hunter@lls.nsw.gov.au | w: www.lls.nsw.gov.au/hunter

www.hunter.lls.nsw.gov.au/our-region/contact-us

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

7 August 2019

By email: mcheritage@iprimus.com.au

Penny McCardle
Principal Archaeologist
Forensic Anthropologist
PO Box 166
ADAMSTOWN NSW 2289

Dear Ms McCardle,

Request - Search for Registered Aboriginal Owners

We refer to your email dated 2 August 2019 regarding an Aboriginal Cultural Heritage Assessment for the proposed development at 45 Mulloway Road, Chain Valley Bay, NSW.

Under Section 170 of the *Aboriginal Land Rights Act 1983* the Office of the Registrar is required to maintain the Register of Aboriginal Owners (RAO). A search of the RAO has shown that there are not currently any Registered Aboriginal Owners in the project area.

We suggest you contact Darkinjung Local Aboriginal Land Council on 02 4351 2930 as they may be able to assist you in identifying Aboriginal stakeholders who wish to participate.

Yours sincerely

Eloane

Elizabeth Loane
Project Officer, Aboriginal Owners
Office of the Registrar, ALRA

Address: Level 3, 2 – 10 Wentworth Street, PARRAMATTA NSW 2150
Post: P.O Box 5068, PARRAMATTA NSW 2124
Phone: 02 8633 1266

Penny McCardle

From: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Sent: Wednesday, 7 August 2019 3:52 PM
To: 'mcheritage@iprimus.com.au'
Subject: RE: SR6147 - Archaeological assessment: list of groups - SR6147

UNCLASSIFIED

Native title search – *Lot 5 on DP122880*
Your ref: *Chain Valley Bay* - **Our ref:** *SR6147*

Dear Penny McCardle,

Thank you for your search request received on 06 August 2019 in relation the above area, please find your results below.

Please note: The following parcel listed in your correspondence was not found on the National Native Title Tribunal's records as 07 August 2019 : *Lot 5 on DP122880.* To enable us to complete the search appropriately and adequately please provide us with additional details e.g. **DETAILED** map, plan or shape file.

Cultural Heritage Searches in NSW
The National Native Title Tribunal (the Tribunal) has undertaken steps to remove itself from the formal list of sources for information about indigenous groups in development areas. The existence or otherwise of native title is quite separate to any matters relating to Aboriginal cultural heritage. Information on native title claims, native title determinations and Indigenous Land Use Agreements is available on the Tribunal's website.

Interested parties are invited to use Native Title Vision (NTV) the Tribunal's online mapping system to discover native title matters in their area of interest. Access to NTV is available at http://www.nntt.gov.au/assistance/Geospatial/Pages/NTV.aspx
Training and self-help documents are available on the NTV web page under "Training and help documents". For additional assistance or general advice on NTV please contact GeospatialSearch@NNTT.gov.au

Additional information can be extracted from the Registers available at http://www.nntt.gov.au/searchRegApps/Pages/default.aspx

Should you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards

Geospatial Searches
National Native Title Tribunal | Perth
Email: GeospatialSearch@nntt.gov.au | **www.nntt.gov.au**

Penny McCardle

From: Amanda Shields <amanda.shields@dlalc.org.au>
Sent: Monday, 19 August 2019 10:31 AM
To: Penny McCardle
Cc: Barry Williams
Subject: Aboriginal Cultural Heritage Assessment

Hi Penny,

I would like to register Darkinjung's interest in the ACHA for the proposed manufactured home estate at Mulloway Rd, Chain Valley Bay.

Kind regards,

Amanda Shields | Culture and Heritage Project Officer
P 02 4351 2930 **F** 02 4351 2946
A 168 Pacific Highway Watanobbi NSW 2259
M PO Box 401 Wyong NSW 2259
W darkinjung.com.au

I acknowledge that the land on which I work is the traditional land of the Darkinyung people. I pay my respect to the Elders, both past and present.

Our ref:DOC19/658860

Dr Penny McCardle
Principal Archaeologist
McCardle Cultural Heritage Pty Ltd

mcheritage@iprimus.com.au

Dear Dr McCardle

25 Mulloway Road, Chain Valley Bay– Aboriginal Stakeholder List

In response to your request under Section 4.1.2(a) of the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010), please find attached a list of known Aboriginal parties that have self-nominated for Lake Macquarie City Council Local Government Area (LGA). Please note the following information with respect to Aboriginal consultation for your project.

Aboriginal stakeholder lists maintained by BCD are comprised of self-nominated individuals and organisations

Please note that the attached list is comprised only of self-nominated individuals and Aboriginal organisations who could have an interest in your project. The list is not vetted by the Biodiversity and Conservation Division (BCD, formerly Office of Environment and Heritage) of the Department of Planning Industry and Environment (BCD). As the list comprises only of self-nominated individuals and Aboriginal organisations, it is not necessarily an exhaustive list of all Aboriginal parties who may hold an interest in the project. Further consultation in accordance with step 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010) is required to identify Aboriginal people who may hold either cultural or historical knowledge relevant to determining the significance of Aboriginal objects or places within your proposed project area.

Aboriginal stakeholder lists may cover multiple Local Aboriginal Land Council boundaries

Please note that the attached list may contain two or more Local Aboriginal Land Councils (LALCs) that occur in the LGA. Please review the boundary of your specific project area and ensure you consult with all LALC(s) that overlap with your project area. BCD does not require you to contact any LALCs on the attached list that you determine are wholly located outside your project area.

Ensure you document the consultation process

Please ensure all consultation undertaken in accordance with the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010) is documented within an Aboriginal Cultural Heritage Assessment Report (ACHAR). This must include copies of all correspondence sent to or received from all Registered Aboriginal Parties (RAPs) throughout the entire consultation process. Omission of these records in the final ACHAR may cause delays in the assessment of an Aboriginal Heritage Impact Permit (AHIP) application or a major project Aboriginal cultural heritage assessment, and could require parts of the consultation process to be repeated if the evidence provided to BCD does not demonstrate that the consultation process has been conducted in accordance with our consultation requirements.

Demonstrate that reasonable consultation attempts have been made

Please ensure you provide evidence to demonstrate that reasonable attempts have been made to contact the relevant parties identified through step 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010). If this evidence is not provided, BCD may deem that the consultation process has not complied with the consultation requirements. Similarly, the proponent is required to record all feedback received from RAPs, along with the proponent's response to the feedback. Where concerns or contentious issues are raised by RAPs during the consultation process, BCD expects that reasonable attempts are made to address and resolve these matters, however BCD acknowledges that in some cases, this may not be achievable. In the case where conflict cannot be resolved, it is the responsibility of the proponent to record these differences and provide the necessary information in their ACHAR with their AHIP application or major project ACHAR.

Consultation should not be confused with employment

As outlined in Section 3.4 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010), the consultation process involves getting the views of, and information from, Aboriginal people and reporting on these. It is not to be confused with other field assessment processes involved in preparing a proposal and an application. BCD does not have any role with respect to commercial engagement. Where RAPs are engaged commercially to provide field services as part of an assessment process, that is a matter for the proponent to manage as they see fit. However, if a proponent is proposing to undertake consultation processes or elicit cultural information from RAPs during the course of conducting a field survey, BCD considers this to form part of the consultation process and expects that all RAPs would be afforded the opportunity to be involved in the process.

Contacting our office

To ensure we can respond to enquiries promptly, please direct future correspondence to our central mailbox: rog.hcc@environment.nsw.gov.au.

Should you require any further information, please do not hesitate to contact us.

Yours sincerely

22 August 2019

STEVEN COX

Senior Team Leader Planning
Hunter Central Coast Branch
Biodiversity and Conservation Division

Enclosure: Attachment A

Attachment A

Hunter Central Coast Branch - Aboriginal Stakeholder List for Lake Macquarie City Council LGA

Organisation	First name	Surname	Address 1	City	State	Post code	Landline	Mobile	Email
A1 Indigenous Services	Carolyn	Hickey	10 Marie Pitt Place	GLENMORE PARK	NSW	2745		0411 650 057	Cazadirect@live.com
Aliera French Trading	Aliera	French	17 Kalinda St	BLACKSMITHS	NSW	2281		0421 299 963	alierafrenchtrading@outlook.com
Arwarbukarl Cultural Resource Association, Miromaa Aboriginal Language and Technology Centre	Darren	McKenny	840 Hunter St	NEWCASTLE WEST	NSW	2302	02 4940 9100		contact@acra.org.au
Awabakal & Guringai Pty Ltd	Tracey Howie	& Kerrie Brauer	PO Box 4061	WYONGAH	NSW	2259	Tracey Howie 0404 182 049	Kerrie Brauer 0412 866 357	traceyhowie@icloud.com, kerrie@awabakal.com.au
Awabakal Descendants Traditional Owners	Peter	Leven	PO Box 137	BUDGEWOI	NSW	2262		0405 149 684	awabakal.to@gmail.com
Awabakal Local Aboriginal Land Council	CEO		127 Maitland Road	ISLINGTON	NSW	2296	02 4965 4532		reception@awabakallalc.com.au
Awabakal Traditional Owners Aboriginal Corporation	Kerrie	Brauer	PO Box 122	RUTHERFORD	NSW	2320	-	0412 866 357	Kerrie@awabakal.com.au
Bahtabah Local Aboriginal Land Council	CEO		44 Pacific Highway	BLACKSMITHS	NSW	2281	-	02 4971 4800	bahtabahmick@hotmail.com
B-H Heritage Consultants	Nola Hampton, Darren Hampton & Raplh Hampton		95 Mount Ettalong Road	UMINA BEACH	NSW	2257		Nola 0401662531	kinghampton77@gmail.com (Nola), darrenhampton4@gmail.com (Darren), Hamptonralph46@gmail.com (Ralph)
Biraban Local Aboriginal Land Council	CEO		68/A Middlepoint Road	BOLTON POINT	NSW	2283	02 4959 1829		admin@birabanlalc.com.au
Corroboree Aboriginal Corporation	Carroll-Johnson	Marilyn	PO Box 3340	ROUSE HILL	NSW	2155	0288 244 324	0415 911 159	corroboreecorp@bigpond.com
Crimson-Rosie	Jeffery	Matthews	6 Eucalypt Avenue	MUSWELLBROOK	NSW	2333	02 6543 4791		
Daniella Chedzey, Jessica Wegener	Daniella	Chedzey	7 Grant Street	WINDERMERE PARK	NSW	2264		0413 508 066	daniellachedzey@yahoo.com.au
Darkinjung Local Aboriginal Land Council	CEO		168 Pacific Highway	WATANOBBI	NSW	2259	02 4351 2930		darkinjung@dlalc.org.au
Deslee Talbott Consultants	Deslee	Matthews	Unit 2 / 19 South Street	GUNNEDAH	NSW	2380		0431 205 336	m-desley@hotmail.com

Organisation	First name	Surname	Address 1	City	State	Post code	Landline	Mobile	Email
Didge Ngunawal Clan	Paul Boyd	& Lilly Carroll	7 Siskin St	QUAKERS HILL	NSW	2763		0426 823 944	didgengunawalclan@yahoo.com.au
Divine Diggers Aboriginal Cultural Consultants	Deidre	Perkins	6 Ashleigh Street	HEDDON GRETA	NSW	2321	02 4937 4573	0425 654 290 (preferred)	dedemaree3@hotmail.com
Gidawaa Walang & Barkuma Neighbourhood Centre Inc.	Craig Horne	Debbie Dacey-Sullivan	76 Lang Street	KURRI KURRI	NSW	2327	02 4937 1094	Craig 0432 336 163	gidawaa.walang@hotmail.com
Indigenous Learning	Craig	Archibald	2 Victoria Street	BELLBIRD HEIGHTS	NSW	2325	0455 550 549	0467 229 507	indiglearning@gmail.com
Jumbunna Traffic Management Group Pty Ltd	Norm	Archibald	17 Flobern Ave	WAUCHOPE	NSW	2446		0413 718 149	jtmanagement@live.com.au
Kauma Pondee Inc.	Jill	Green	Unit 6/1 Central Street	LAMBTON	NSW	2305		0434 210 190	kaumapondee@live.com.au
Kawul Pty Ltd trading as Wonn1 Sites	Arthur	Fletcher	619 Main Road	GLENDALE	NSW	2285	02 4954 7751	0402 146 193	Wonn1sites@gmail.com
Lower Hunter Aboriginal Incorporated	David	Ahoy	5 Killara Drive	CARDIFF SOUTH	NSW	2285		0421 329 520	lowerhunterai@gmail.com
Lower Hunter Wonnarua Cultural Services	Lea-Anne Ball and Uncle Tommy Miller		51 Bowden Street	HEDDON GRETA	NSW	2321	02 4937 2694	0402 636 521	tn.miller@southernphone.com.au
Murra Bidgee Mullangari Aboriginal Corporation	Ryan Johnson	& Darleen Johnson-Carroll	PO Box 246	SEVEN HILLS	NSW	2147		0497 983 332	murrabidgeemullangari@yahoo.com.au
Myland Cultural & Heritage Group	Warren	Schillings	30 Taurus Street	ELERMORE VALE	NSW	2287		0431 392 554	warren@yarnteen.com.au
Roger Matthews Consultancy	Roger	Matthews	105 View Street	GUNNEDAH	NSW	2380		0455 671 288	
Wannangini Pty.Ltd.	Tracey	Howie	PO Box 4061	WYONGAH	NSW	2259	02 4396 8743	0404 182 049	tracey.howie@wannagini.org
Wattaka Wonnarua CC Service	Des	Hickey	4 Kennedy Street	SINGLETON	NSW	2330	02 6573 3786	0432 977 178	deshickey@bigpond.com
Widescope Indigenous Group	Steven	Hickey	73 Russell Street	EMU PLAINS	NSW	2750		0425 230 693 0425 232 056	Widescope.group@live.com
Wonnarua Elders Council	Richard	Edwards	PO Box 844	CESSNOCK	NSW	2325			
Yarrawalk (A division of Tocomwall Pty Ltd), Tocomwall Pty Ltd on behalf of Scott Franks and Anor on behalf of the Plains Clans of the Wonnarua People NSD1680/2013	Scott	Franks	PO Box 76	CARRINGBAH	NSW	1495		0404 171 544	scott@tocomwall.com.au
Yinarr Cultural Services	Kathleen	Steward Kinchela	Lot 5 Westwood Estate	MERRIWA	NSW	2329		0475 436 589	yinarculturalservices@bigpond.com dontminemeay@gmail.com

Organisation	First name	Surname	Address 1	City	State	Post code	Landline	Mobile	Email
	Kevin	Duncan	95 Moala Parade	CHARMHAVEN	NSW	2263	02 4392 9346	0431 224 099	kevin.duncan@bigpond.com
	Sharon	Hodgetts	47 Kent Street	GRETA	NSW	2334		0405 288 814	sharonhodgetts@hotmail.com
	Kyle	Howie	25 Athol Street	TOUKLEY	NSW	2263		0413 500 031	kyle@guringai.com.au
	Trudy	Smith	PO Box 141	TOUKLEY	NSW	2263		0409 449 609	hunters_1@bigpond.com
	Tamara	Towers	Unit 4, 16-18 Simpson Court	MAYFIELD	NSW	2304		0402 360 356	worimiacs@gmail.com
	Yvette and Jackson	Walker	19 Wakehurst Drive	WYONG	NSW	2259		0459 194 215 0476 218 076	yvettewalker1@hotmail.com

Copy of this went to all 39 RAPs

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

22 August 2019

«Organisation_»
«First_name_» «Surname_»
«Email_»

Dear «First_name_»,

RE: Written notification of project proposal and registration of interest as required under BCD Aboriginal Cultural heritage Consultation requirements fro proponents 2010 (Stage 1)– Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by Vivacity Property Pty Ltd (Level 54, Governor Phillip Tower, 1 Farrer Place, Sydney, NSW 2000) to prepare an Aboriginal Heritage Impact Assessment for the proposed manufactured home estate located at 25 Mulloway Road, Chain Valley Bay, Central Coast Local Government Area (LGA).

As per the As per the Biodiversity and Conservation Division (BCD) formerly the Office of Environment and Heritage (OEH) policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, Stage 1 (s1.3 to 4.1.8), MCH and the proponent are seeking community consultation with indigenous knowledge holders relevant to the project area who can determine the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Location of the project area

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in the preparation of an application for an AHIP (if required) and to assist the Chief Executive of the BCD, in his or her consideration and determination of the application should an AHIP be required.

This is an invitation for Aboriginal people who hold cultural knowledge relevant to the proposed project area and who can determine the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation. As per the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (s* 4.1.5, 4.1.7 and 4.1.8), you are advised of the following:

- unless otherwise specified, if you register your interest, your details will be provided to BCD and the LALC;
- the LALC's who hold cultural knowledge relevant to the proposed project area that is relevant to determining the significance of Aboriginal objects and/or places within the proposed project area who wish to register, must do so as an Aboriginal organisation not an individual;
- where an Aboriginal organisation representing Aboriginal people, who hold cultural knowledge relevant to the proposed project area and that is relevant to determining the significance of Aboriginal objects and/or places within the proposed project area who wish to register, must nominate a contact person **and** provide written confirmation and contact details of this person or persons.

MCH understands it is the Indigenous custom to elect knowledge holders and it is traditionally the Indigenous people who nominate who speak for country. Unfortunately, some RAPs and Government Departments have placed the onus of identifying traditional knowledge holders onto proponents and archaeologists. In order to do this, MCH are guided by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), the Burra Charter (2013) and Ask First (2002) which provide guidelines to identify traditional knowledge holders.

A number of questions are attached to assist MCH and the proponent in identifying traditional knowledge holders who are holders of specific detailed traditional knowledge, traditional knowledge holders who are holders of general traditional knowledge and knowledge holders who have knowledge based on other sources (such as but not limited to, ethnographic information, archaeological assessments, filed experience). MCH respectfully ask that you read the questions and provide your answers if you choose to register an interest in the project. MCH also sincerely apologise if you take offence to any questions or the manner in which we are guided to identify traditional knowledge holders; no offence is intended.

Should you wish to register your interest in this project, please register in writing no later than C.O.B. 4th September 2019 to:

Dr. Penny McCardle
McCardle Cultural Heritage
PO Box 166
Adamstown, NSW, 2289

If you register your interest in this project, please also nominate your preferred option to receive the project

information. You may wish to have a non paid meeting and receive an information pack, or receive information packet through the mail, fax or e-mail. If a preferred method is not nominated, all information will be forward by mail, e-mail or fax.

Please note that in order to adhere to time constraints, the absence of a response by the prescribed timeline, will be taken by the proponent as your indication that your organisation does not wish to register for this project.

All information provided will be included in the consultation component of the assessment report unless otherwise stated it is confidential.

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

REGISTRATION OF INTEREST: 25 Mulloway Road, Chain Valley Bay

The project area lies within Awabakal traditional lands.

Company Name):_____

Contact:_____

Postal address:_____

_____

Mobile No:_____

E-Mail:_____

Date:_____

If you are a descendant of, or represent a descendant of the Awabakal people, please answer the questions below (circle yes/no).

1) Are **you** part of a current Native Title Claim where the project area is located within? YES/NO

2) Are **you** a descendant of the Awabakal people? YES/NO

3) Are **you** a knowledge holder? YES/NO

If yes please clarify further:

a) I am a traditional knowledge holder of specific, details knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

b) I am a traditional knowledge holder of general knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

c) I am a knowledge holder of recent information obtained through other means (such as, but not limited to, ethnographic sources, internet searches, assessment reports, personal experience etc). YES NO

4) Do **you represent** a traditional knowledge holder? YES/NO

If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

5) Do **you represent** a traditional knowledge holder of general knowledge? YES/NO

If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

6) Do **you represent** a knowledge holder of recent information? YES/NO

If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

Please nominate when you would like to provide any knowledge:

1) Before the survey YES/NO

2) During the survey YES/NO

3) After the survey (within a week after the survey due to time consideration for preparing the draft reports) YES/NO

If you are <u>not</u> a descendant of the Awabakal people and would still like to register an interest in the project please answer the questions below.

1) Are you a knowledge holder (whereby you obtain your knowledge through written records such as ethnographic information, archaeological reports, field experience). YES/NO

2) Do you have a specific or general interest in the project? If so, please outline your interest. YES/NO

_____

_____

_____

Penny McCardle

To: Kerrie Brauer
Subject: RE: Chain Valley Bay

From: Kerrie Brauer <kerrie@awabakal.com.au>
Sent: Wednesday, 28 August 2019 9:59 PM
To: 'Penny McCardle' <mcheritage@iprimus.com.au>
Cc: 'Tracey Howie' <tracey@guringai.com.au>; 'Peter Leven' <peterleven@y7mail.com>
Subject: RE: Chain Valley Bay

Dear Penny,

Please find below the filled in questionnaire for the registration of interest regarding the Chain Valley Bay project.

If you require any further information please do not hesitate in contacting me.

Kind regards,
Kerrie Brauer

ATOAC
Kerrie Brauer | Director | Administration | Awabakal Traditional Owners Aboriginal Corporation
M: 04 12 86 63 57 | E: kerrie@awabakal.com.au | www.awabakal.com.au
PO Box 122 Rutherford NSW 2320 Australia

REGISTRATION OF INTEREST: 25 Mulloway Road, Chain Valley Bay

The project area lies within Awabakal traditional lands.

Company Name):_Awabakal Traditional Owners Aboriginal Corporation

Contact:__Kerrie Brauer_

Postal address:__PO Box 122 Rutherford NSW 2320 __

_____

Mobile No:___0412 866 357 __

E-Mail:_____kerrie@awabakal.com.au_____

Date:___28/8/19_____

If you are a descendant of, or represent a descendant of the Awabakal people, please answer the questions below (circle yes/no).

1) Are **you** part of a current Native Title Claim where the project area is located within? YES/NO

2) Are **you** a descendant of the Awabakal people? YES/NO

3) Are **you** a knowledge holder? YES/NO

If yes please clarify further:

a) I am a traditional knowledge holder of specific, details knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

b) I am a traditional knowledge holder of general knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

c) I am a knowledge holder of recent information obtained through other means (such as, but not limited to, ethnographic sources, internet searches, assessment reports, personal experience etc). YES/ NO

4) Do **you represent** a traditional knowledge holder? YES/NO
If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

5) Do **you represent** a traditional knowledge holder of general knowledge? YES/NO

If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

6) Do **you represent** a knowledge holder of recent information? YES/NO
If yes, please provide details of whom you represent. You must provide written confirmation of those individual(s) whom you act on behalf of.

Name: _____ Phone:_____

Name: _____ Phone:_____

Name: _____ Phone:_____

Please nominate when you would like to provide any knowledge:

1) Before the survey YES/NO

2) During the survey YES/NO

3) After the survey (within a week after the survey due to time consideration for preparing the draft reports) YES/NO

If you are <u>not</u> a descendant of the Awabakal people and would still like to register an interest in the project please answer the questions below.

1) Are you a knowledge holder (whereby you obtain your knowledge through written records such as ethnographic information, archaeological reports, field experience). YES/NO

2) Do you have a specific or general interest in the project? If so, please outline your interest. YES/NO

_____
_____
_____

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Notices

General Notices

Notification of project proposal and registration of interest under BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1) – Proposed manufactured home estate, Chain Valley Bay

McCardle Cultural heritage (MCH) have been engaged by Vivacity Property Pty Ltd (Level 54, Governor Phillip Tower, 1 Farrer Place, Sydney, NSW 2000) to prepare an Aboriginal Cultural Heritage Assessment (ACHA) and Section 90 Aboriginal Heritage Impact Permit (AHIP) application, if required, for the proposed manufactured home estate located at No. 45 Mulloway Road, Chain Valley Bay (Lot 5 DP 1228880).

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in the preparation of the AHIP application if required and to assist the Chief Executive of BCD in his or her consideration and determination of the application should an AHIP be required.

In compliance with the BCD policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, MCH would like to extend an invitation to Aboriginal people who hold cultural knowledge relevant to the proposed project area and who can determine the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in the consultation process for this project.

Please be advised that due to a clerical error the previously advertised date for the closure of submissions was incorrect. Accordingly, the cut-off date has been amended below.

Written registrations must be forward to MCH (P.O. Box 166 Adamstown, NSW, 2289; mcheritage@iprimus.com.au; fax 02 4950 5501) no later than C.O.B. 12 September 2019.

All registered parties will then be contacted to discuss the project in compliance with the BCD policy. If you register your interest in this project, please also nominate your preferred option to receive the initial information. You may wish to attend a non-paid meeting and receive an information pack, or receive an information packet through the mail, fax or e-mail.

Any parties to register are advised that, unless otherwise requested, their details will be forward to BCD and the relevant LALC within 28 days of the closing date of registration and in compliance with the BCD policy.

Tenders, Quotes & Contracts

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Request for Proposal

GOSFORD CBD SHUTTLE BUS SERVICE
Contract No. CPA/2062
Documents: Download free of charge at www.tenderlink.com/centralcoastnsw/
Enquiries: Scott Stapleton at scott.stapleton@centralcoast.nsw.gov.au
Closing Date: 2pm, Tuesday 17 September 2019
Gary Murphy
CHIEF EXECUTIVE OFFICER
www.centralcoast.nsw.gov.au

Central Coast Council
Request for Tender

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Contract No. CPA/2329
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Enquiries: Steven Murphy at Steven.Murphy@centralcoast.nsw.gov.au
Closing Date: 2pm, Tuesday 17 September 2019
Gary Murphy
CHIEF EXECUTIVE OFFICER
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OPTUS

PROPOSAL TO UPGRADE EXISTING OPTUS MOBILE PHONE BASE STATION AT:
51-54 The Esplanade, Ettalong Beach NSW 2257
(Optus Ref: 51631 Ettalong Beach, RFNSA Ref: 2257001)

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2. Optus regards the proposed installation as a Low Impact Facility under the Telecommunications (Low-impact Facilities) Determination 2018 ("the Determination") based on the description above.
3. In accordance with Section 7 of C564:2018 Mobile Phone Base Station Deployment Code, we invite you to provide feedback about the proposal. Further information and/or comments should be directed to Optus' representative c/- Archie Agencies, Carolyn ONEILL Pty Ltd, PO Box 1118, Crows Nest NSW 1585 +61 2 9438 1988, or enquiries@archieagencies.com.au and/or www.rfnsa.com.au/2257001 by Tuesday, 17 September 2019.

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McCARDLE
CULTURAL HERITAGE

PO Box 166
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mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

5 September 2019

Awabakal Traditional Owners Aboriginal Corporation
Kerrie Brauer
Kerrie@awabakal.com.au

Dear Kerrie

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 2 & 3) – Presentation of information about the proposed project and request for comment on the proposed methods of investigation - Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

McCardle Cultural Heritage (MCH) would like to thank you for registering your interest in this project. MCH sent a letter extending an invitation to register your interest and asking if you would prefer to have a meeting to discuss the project or have an information pack sent to you. As MCH did not receive your preferred option, we are posting the information packet.

In order for the proponent to fulfil its cultural heritage consultation requirements per the BCD policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Stage 2; s 4.2.1 to 4.2.4; Stage 3, s 4.3.1 to 4.3.7) please find enclosed an Aboriginal Cultural Heritage Assessment Information Packet that the proposed project including, but not limited to, details of the proposed the project including maps indicating the impact areas , an outline of the impact assessment process, summary of the cultural, environmental and archaeological contexts, a site specific predictive model, details of the proposed methodology, the roles and responsibilities of all parties, and provide an opportunity for you to identify and raise any cultural concerns, perspectives and assessment requirements you may have.

MCH would appreciate your input on;

- The proposed methodology
- Any Aboriginal objects and/or place(s) of cultural value within the investigation area and/or an any issues of cultural significance you are aware of
- Any protocols and/or restrictions you may wish to implement in relation to any information you may like to provide, and
- Any other factors you consider relevant to the heritage assessment;

Please make your written submission to MCH by close of business 2nd October **(a quicker response would be greatly appreciated).** The absence of a response by the requested timeline will be taken as your indication that your organisation has no comments regarding the above.

The proponent (Vivacity Property Pty Ltd) intends to engage a number of RAPs (relative to the scale and nature of the investigations) to participate in the field work. If you wish to be considered for paid participation in the field investigations please review and complete the Aboriginal stakeholder site officer application form attached to the information packet provided. Aboriginal representatives will be selected by Vivacity Property Pty Ltd based upon merits of the applications received with respect to the selection criteria. Late application will not be accepted by Vivacity Property Pty Ltd.

Please note that the number of people engaged and the duration of any engagement will be at the sole discretion of Vivacity Property Pty Ltd who will notify MCH of the successful applicants. MCH will notify the successful applicants and all RAPs will be invited to participate in the field investigations regardless of remuneration and subject to Occupational Health and Safety requirements and operational requirements.

Please note that regardless of participation in the field investigations, RAPs will be consulted in accordance with the BCD policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* for the remainder of the assessment.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the BCD requirements, please ensure that any items that you or your group deem confidential are either stated at the beginning of a conversation or stamped/written on each piece of paper communicate.

MCH looks forward to your response and working with you on this project. Please do not hesitate to contact myself on 0412 702 396 should you have any questions.

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Enclosures:
Aboriginal Cultural Heritage Assessment Information Packet

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

5 September 2019

Darkinjung Local Aboriginal Land Council
CEO
darkinjung@dlalc.org.au

Dear CEO

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 2 & 3) – Presentation of information about the proposed project and request for comment on the proposed methods of investigation - Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

McCardle Cultural Heritage (MCH) would like to thank you for registering your interest in this project. MCH sent a letter extending an invitation to register your interest and asking if you would prefer to have a meeting to discuss the project or have an information pack sent to you. As MCH did not receive your preferred option, we are posting the information packet.

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- Any other factors you consider relevant to the heritage assessment;

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MCH looks forward to your response and working with you on this project. Please do not hesitate to contact myself on 0412 702 396 should you have any questions.

Yours sincerely,

for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Enclosures:
Aboriginal Cultural Heritage Assessment Information Packet

45 Mulloway Road, Chain Valley Bay

LGA: Central Coast

Aboriginal Cultural Heritage Assessment Information Packet

5 September 2019

McCARDLE CULTURAL HERITAGE PTY LTD

ACN 104 590 141 • ABN 89 104 590 141

PO Box 166, Adamstown, NSW 2289
Mobile: 0412 702 396 • Fax: 4952 5501 • Email: mcheritage@iprimus.com.au

McCARDLE
CULTURAL HERITAGE

Report No: J19055 Info Pack	
Approved by:	Penny McCardle
Position:	Director
Signed:	
Date:	4 September 2019

CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

Aboriginal Cultural Heritage Values: traditional values of Aboriginal people, handed down in spiritual beliefs, stories and community practices and may include local plant and animal species, places that are important and ways of showing respect for other people.

Aboriginal Place: are locations that have been recognised by the Minister for Climate Change and the Environment (and gazetted under the *National Parks and Wildlife Act 1974*) as having special cultural significance to the Aboriginal community. An Aboriginal Place may or may not include archaeological materials.

Aboriginal Site: an Aboriginal site is the location of one or more Aboriginal archaeological objects, including flaked stone artefacts, midden shell, grinding grooves, archaeological deposits, scarred trees etc.

Harm: is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated

Traditional Aboriginal Owners: Aboriginal people who are listed in the Register of Aboriginal owners pursuant to Division 3 of the *Aboriginal Land Register Act (1983)*. The Registrar must give priority to registering Aboriginal people for lands listed in Schedule 14 of the *National Parks and Wildlife Act 1974* or land subject to a claim under 36A of the *Aboriginal Land Rights Act 1983*.

Traditional Knowledge: Information about the roles, responsibilities and practices set out in the cultural beliefs of the Aboriginal community. Only certain individuals have traditional knowledge and different aspects of traditional knowledge may be known by different people, e.g. information about men's initiation sites and practices, women's sites, special pathways, proper responsibilities of people fishing or gathering food for the community, ways of sharing and looking after others, etc.

1 INTRODUCTION

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by Vivacity Property Pty Ltd prepare an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed development of a manufactured home estate with approx. 190 homesites, community facilities and amenities located at 45 Mulloway Road, Chain Valley Bay.

The assessment will determine the potential impacts upon the indigenous cultural heritage within the development area. It is intended that any areas of indigenous cultural heritage value will be identified and appropriate management recommendations will be established through consultation with the registered Aboriginal parties.

In compliance with the Biodiversity and Conservation Division (BCD) formerly the OEH policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Stage 2, s4.21 to 4.2.4 and Stage 3 s4.3.1 to 4.3.7), this Aboriginal Cultural Heritage Information Packet provides information about the proposed project including, but not limited to, details of the proposed the project including maps indicating the impact areas , an outline of the impact assessment process, cultural context, summary of the environmental and archaeological contexts, a site specific predictive model, details of the proposed methodology the roles and responsibilities of all parties, and provide an opportunity for you to identify and raise any cultural concerns, perspectives and assessment requirements you may have.

The assessment has been undertaken to meet the BCD *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010a,* the BCD *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011,* the BCD *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010b,* and the brief.

1.1 CONSULTATION

Consultation will be undertaken as per the BCD *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* and will be detailed in the Aboriginal Cultural Heritage Assessment report.

1.2 PROJECT AREA

The project area is defined by the proponent and is located is located at the eastern end of Mulloway Road at the intersection with Chain Valley Bay Road. Including Lot 5 DP122880, location and extent of the project area is illustrated in Figures 1.1 and 1.2.

Figure 1.1Location of the project area

Figure 1.2 Aerial photograph of the project area

1.3 PROJECT OUTLINE AND IMPACTS

The proposal is for a manufactured home estate with approx. 190 homesites, community facilities and amenities located at 45 Mulloway Road, Chain Valley Bay.

1.4 CRITICAL DEVELOPMENT TIME LINES

The proponent wishes to commence works as soon as possible but also acknowledges the need to undertake indigenous cultural heritage investigations on the site. Ideally these would be undertaken prior to any works commencing on the site, however, it would be possible to stage the development to exclude areas identified for investigation until the investigations are complete.

1.5 CRITICAL ARCHAEOLOGICAL TIMELINE

The following Table indicates the timelines critical for the archaeological assessment. However, please note that consultation may be increased or decreased depending on response times and knowledge sharing.

1.1 Archaeological timeline

Stages	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Stage 1: consult.										
Stage 2: survey										
Stage 3: reporting										
Stage 4: finalisation										

2 ENVIRONMENTAL CONTEXT

The environmental context provides a background to the landforms and potential resources that may have been available in the past. The land uses also assists in an understanding of potential impacts they would have had on the landscape and associated cultural materials. This information is utilised with the archaeological context in order to ascertain a reliable predictive model of not only sit location and site type, but also the likelihood of survivability within that landscape.

The project area is situated on Triassic Narrabeen Group geological formation consisting of claystone. Sandstone and shale (Sydney 1:100,000 geological map sheet) and consist of the erosional Doyalson soil landscape which is characterised by undulating rises with local relief up to 30 metres. Examination of the Catherine Hill Bay 1:25,000 topographic map and nearmap indicates that the project area is situated approximately one-kilometre east of Chain Valley Bay and Kiriganan Creek (3rd order) runs west along the southern border of the project area, flowing into Chain Hill Bay. Thus, the project area may be considered well-resourced in terms of water availability and associated subsistence and medicinal resources along the Creek and in close proximity. The project area has been cleared, used for early agricultural activities (ploughing and grazing) and currently contains at least two (2) dwellings, as well as an automotive repair business and other commercial/industrial use (extractive materials stockpiles and/or earthmoving depot). Numerous tracks and two dams are also present.

The regional environment provided resources, including raw materials, fauna, flora and water, that would have allowed for sustainable occupation of the area. Within the project area, Kiriganan Creek is located along its southern border and would have provided resources that would have allowed for camping at least during times of heavy rain bringing with it substance and plan resources.

In relation to modern alterations to the landscape, the use of the project area for past agricultural purposes can be expected to have had low to moderate impacts upon the archaeological record. Additional disturbances would have from further clearing and excavation works associated with the dwellings, sheds, dams and associated infrastructure and utilities. Because of the natural and cultural processes discussed above, site integrity cannot be assumed for the project area. However, the existence of in situ cultural materials cannot be ruled out.

3 ARCHAEOLOGICAL CONTEXT

The archaeological background provides context to the project area and wider cultural landscape in which the project area is situated. It identifies known sites, their landform location and proximity to subsistence resources. It also provides the nature and extent of known sites as well as their distribution across the landscape, thereby enabling a site-specific predictive model to be developed. A search of the BCD AHIMS register has shown that 20 known Aboriginal sites are currently recorded within three kilometres of the project (Table 3.1 and Figure 3.1).

Table 3.1 Summary of AHIMS sites

Site type	Frequency	Percent
SHL/AFT	3	15%
TRE	3	15%
SHL	7	35%
AFT	6	30%
restricted	1	5%
Subtotal	**20**	**100%**

Figure 3.1 Approximate location of AHIMS sites

Previous archaeological studies undertaken throughout the region, the BCD AHIMS register and the environmental context provide a good indication of site types and site patterning in the area. This research has shown that occupation sites (artefact scatters and isolated finds) are the most frequently recorded site type and are commonly located along or adjacent to watercourses, and on relatively flat to gently sloping topography in close proximity to reliable water. Sites with higher artefact densities are similarly concentrated within fifty metres of watercourses. Within the local area, previous assessments within a similar environmental context indicate that, within a well-watered context, there is high potential for archaeological material to be present on level, typically well-elevated landforms that provide ready access to low-lying waterlogged areas and the associated resources.

3.1.1 PREDICTIVE MODEL

Just as the environmental context and the results of the regional and local archaeological contexts have assisted in formulating a predictive model, the predictive modeling has assisted in formulating the field investigation methodology (Section 4).

Within the project area it is predicted that there is a high potential for evidence of past Aboriginal land use along Kiriganan Creek. It is anticipated that sites will be within 50 metres of the creek, will include artefact scatters or isolated finds and will contain assemblages dating from the mid to late Holocene, featuring tuff as the dominant raw material, with lesser quantities of quartz, chert, and other raw materials. Artefacts will consist predominantly of flaked pieces, flakes, broken flakes and cores. Some modified artefacts including retouched flakes, and asymmetrical and symmetrical backed artefacts can be expected. Dependent on the level of exposure within the project area, the sites are expected to be located within the disturbed context of erosion scars and within the remnant soil horizon, and whilst it is possible that sub-surface deposits will be present within parts of the project area, this is entirely reliant on the level of disturbance across the site. It must be emphasised that sites within the project area are expected to have been disturbed by both natural and human disturbances. Therefore, the accuracy of these predictions will be largely determined by the degree of such disturbances.

4 METHODS OF INVESTIGATION

There are two methods of investigation including the gathering of cultural significance knowledge and archaeological assessment. These are briefly outlined below.

4.1 GATHERING OF INFORMATION OF CULTURAL SIGNIFICANCE

MCH and the proponent understand that unlike the written word, Aboriginal cultural knowledge is not static, but responds to change through absorbing new information and adapting to its implications. Aboriginal cultural knowledge is handed down through oral tradition (song, story, art, language and dance) from generation to generation, and preserves the relationship to the land (DECCW 2010).

Specific details and parts of cultural knowledge are usually held and maintained by individuals or within particular family groups. Although the broader community may be aware of the general features of that knowledge, it is not a common practice within Aboriginal society for detailed cultural knowledge to be known in the broader community or within Aboriginal community organisations. However, at times these organisations may defer to particular individuals or family groups as being the knowledge-holders of particular sets of cultural knowledge about places or the environment (DECCW 2010).

Proposed methods of gathering information of cultural significance are provided in the Cultural Heritage information packet.

All responses to the cultural information packet will be considered in the final methods which will adapt accordingly. Any other changes to the methods may occur on site in order adapt to unforseen field conditions.

4.2 ARCHAEOLOGICAL ASSESSMENT

This entails an archaeological assessment of the proposed project area. It includes the gathering of both environmental and archaeological information to gain an understanding of the environment, disturbances and provide a predictive model for the proposed project area.

Following the completion of the survey, a report that includes detailed environmental and archaeological background, results, discussion, the cultural significance as determined by the registered Aboriginal parties and mitigation measures will be provide to all registered parties for their review. This will also include opportunities for the registered Aboriginal parties to provide feedback on any management or mitigation recommendations. All registered parties will also be required to provide their own report/letter within a specified time and a copy of the final report will be provided to all parties. A summary of the regional and local archaeological contexts ism provided in order to assist in the development of a predictive model for the project area that will in turn assist in determining the survey methodology/strategy.

5 PROPOSED METHODS OF GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

There are two methods of investigation including the gathering of information about cultural significance and an archaeological assessment. The archaeological assessment was discussed in the Archaeological information packet provided to you. The gathering of information about cultural significance for the Cultural heritage Assessment is briefly outlined below.

5.1 GATHERING OF INFORMATION OF CULTURAL SIGNIFICANCE

The aim of the cultural heritage assessment is to facilitate a process whereby RAPs can;

1) Contribute culturally appropriate information
2) Contribute to the proposed methodology
3) Provide information that will enable the cultural significance of Aboriginal objects and/or places within the project area to be determined.

MCH and the proponent understand that unlike the written word, Aboriginal cultural knowledge is not static, but responds to change through absorbing new information and adapting to its implications. Aboriginal cultural knowledge is handed down through oral tradition (song, story, art, language and dance) from generation to generation, and preserves the relationship to the land (DECCW 2010).

Specific details and parts of cultural knowledge are usually held and maintained by individuals or within particular family groups. Although the broader community may be aware of the general features of that knowledge, it is not a common practice within Aboriginal society for detailed cultural knowledge to be known in the broader community or within Aboriginal community organisations. However, at times these organisations may defer to particular individuals or family groups as being the knowledge-holders of particular sets of cultural knowledge about places or the environment (DECCW 2010).

In some cases the information provided may be sensitive and MCH and the proponent will not share that information with all registered Aboriginal parties or others without the express permission of the individual. MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information.

5.2 IDENTIFYING KNOWLEDGE HOLDERS

The aim is to identify Traditional Owners/traditional knowledge holders who have knowledge that is relevant to the project area so that any potential effects of the project or activity on the Indigenous heritage values of objects and/or places can be identified.

It also aims to identify Indigenous people who may not necessarily be Traditional Owners/traditional knowledge holders but who do have interests in the area so that any effects of the project or activity on the Indigenous heritage values of objects and/or places, such as mission stations and historic buildings, will be identified.

MCH understands it is the Indigenous custom to elect knowledge holders and it is traditionally the Indigenous people who nominate who speak for country. Unfortunately, some RAPs and Government Departments have placed the onus of identifying traditional knowledge holders onto proponents and archaeologists. In order to do this, MCH are guided by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), the Burra Charter (2013) and Ask First (2002) which provide guidelines to identify traditional knowledge holders.

Knowledge holders are defined as follows:

a) Traditional knowledge holder of specific, details knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

b) Traditional knowledge holder of general knowledge pass directly by a traditional knowledge holder in a traditional manner YES/NO

c) Knowledge holder of recent information obtained through other means (such as, but not limited to, ethnographic sources, internet searches, assessment reports, personal experience etc). YES/NO

Knowledge holders have been initially identified through the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 1 (S. 4.1.1 to 4.1.2) that seeks to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Additionally, knowledge holders were sought to be identified through the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 1 (S. 4.1.3 to 4.1.8) that sought to identify, notify and register Aboriginal people who identify as knowledge holders (using the above defined knowledge holder criteria) who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Native Title Claimant Groups/individuals are acknowledged as knowledge holders due to the requirements through the Native Title Registration process. Native Title Claimant groups/individuals are also asked to further define the knowledge holder using the above defined knowledge holder criteria.

This process ensures consistent consultation for all RAPs and adheres to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010).

5.3 IDENTIFYING CULTURAL SIGNIFICANCE

Cultural significance is embodied in the place—in its fabric, setting, use, associations and meanings. It may exist in: objects at the place or associated with it; in other places that have some relationship to the place; and in the activities and traditional and customary practices that may occur at the place or that are dependent on the place. A place may be of cultural significance if it satisfies one or more of these criteria. Satisfying more criteria does not mean a place is necessarily more significant.

Only Aboriginal people who are descendants of the people from the traditional lands in which the project is situated can identify the cultural significance of their own cultural heritage.

The cultural significance of a place is assessed by analysing evidence gathered through the physical investigation of the place, research and consultation for this project in line with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales (DECCW 2010) and the ICOMS Burra Charter (2013).

Part of the process is to evaluate its qualities against a set of criteria that are established for this purpose. The criteria used include those set out by the Burra Charter (see below).

5.4 VALUES AND QUESTIONS TO CONSIDER

The following values and questions are derived from the Burra Charter (2913) to facilitate your consideration when providing information on the cultural significance of any Aboriginal objects(s) and/or place(s). The criteria discussed below are a means to assess cultural significance in order to meet the Government Departmental requirements. MCH understands that the method of assessing cultural

significance presented may not be culturally appropriate and considered offensive to some; it is not intended to be so.

There are five terms or values, which are listed alphabetically in the Burra Charter, and are often included in Australian heritage legislation. Criteria are also used to help define cultural and natural significance, and there is now a nationally agreed set of heritage assessment criteria and each of these criteria may have tangible and intangible aspects and it is essential that both are acknowledged.

The five criteria include Aesthetic value, Historic value, Scientific value, Social value and Spiritual value. These are discussed below along with some questions for consideration when you consider reporting on the cultural significance.

5.4.1 AESTHETIC SIGNIFICANCE

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. It is how we respond to visual and non-visual aspects such as sounds, smells and other factors that can have a strong impact on your thoughts, feelings and attitudes. It may also include consideration of the form, scale, colour, texture and material and its beauty (Australia ICOMOS 2013).

When considering the aesthetic value and significance of a site and/or PAD, some questions to consider may include:

- Does the object or place have special compositional or uncommonly attractive qualities involving combinations of colour, textures, spaces, massing, detail, movement, unity, sounds, scents?
- Is the object or place distinctive within the setting or a prominent visual landmark?
- Does the object or place have qualities which are inspirational or which evoke strong feelings or special meanings?
- Is the object or place symbolic for its aesthetic qualities: for example, does it inspire artistic or cultural response, is it represented in art, photography, literature, folk art, folk lore, mythology or other imagery or cultural arts?
- Does the object or place display particular aesthetic characteristics of an identified style or fashion?
- Does the object or place show a high degree of creative or technical achievement?

5.4.2 HISTORIC SIGNIFICANCE

The historic value encompasses all aspects of history. For example, it may include the history of aesthetics, art, science, society and spirituality. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Australia ICOMOS 2013).

When considering the historic value and significance of a site and/or PAD, some questions to consider may include:

- Is the object or place associated with an important event or theme in Awabakal and/or your history?
- Is the object or place important in showing patterns in the development of Awabakal and/or your history locally, in a region, or on a state-wide, or national or global basis?
- Does the object or place show a high degree of creative or technical achievement for a particular period?
- Is the object or place associated with a particular person or cultural group important in the history of the local area, state, nationally or globally?

5.4.3 SCIENTIFIC SIGNIFICANCE

The scientific value refers to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions (Australia ICOMOS 2013). Whilst the scientific value and significance will be discussed in detail in the Archaeological Heritage Impact Assessment report, it is important to consider this value when assessing the cultural values and significance of an object and/or place.

When considering the scientific value and significance of a site and/or PAD, you may consider:

- Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?

5.4.4 SOCIAL VALUE

Social value refers to the associations a place has for a particular community or cultural group and the cultural or social meaning it has for that community or cultural group (Australia ICOMOS 2013).

When considering the social value and significance of a site and/or PAD, some questions to consider may include:

- Is the object or place important as a local marker or symbol?
- Is the object or place important as part of Awabakal community identity or the identity of another particular cultural group?
- Is the object or place important to the Awabakal people, community or other cultural group because of associations and meanings developed from long use and association?

5.4.5 SPIRITUAL VALUE

Spiritual value embraces the intangible values and meanings embodied in or evoked by a place which gives importance to the spiritual identity, or traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places (Australia ICOMOS 2013). The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm (Australia ICOMOS 2013).

When considering the spiritual value and significance of a site and/or PAD, some questions to consider may include:

- Does the object or place contribute to the spiritual identity or belief system of the Awabakal or another cultural group?
- Is the place a repository of knowledge, traditional art or lore related to spiritual practice of the Awabakal people or another a cultural group?
- Is the object or place important in maintaining the spiritual health and wellbeing of Awabakal people or another culture or group?
- Do the physical attributes of the object or place play a role in recalling or awakening an understanding of an individual or a group's relationship with the spiritual realm?

- Do the spiritual values of the object or place find expression in Awabakal cultural practices or human-made structures, or inspire creative works?

5.5 PROVIDING YOUR KKNOWLEDGE AND CULTURAL SIGNIFICANCE INFORMATION

It is difficult to provide options that will ensure every individuals needs are met. In light of this, the following proposed options are provided are in no way the only options available. If you have alternative ways of providing your knowledge and cultural significance information please notify MCH to ensure we can facilitate your requirements where appropriate.

It is acknowledged and understands that the methods and options discussed are not traditional customs and some may take offence. MCH sincerely apologise for any offence taken as none is intended.

1) Discussion in the field during the survey
2) Written documentation (letter, e-mail, fax)
3) Meeting to discuss and/or provide written documentation
4) Formal interview with specific questions/answers and/or discussions
5) Phone conversation
6) Skype conversation
7) Using the attached form/questioner

5.6 PROPOSED CULTURAL HERITAGE ASSESSMENT REPORT

MCH will undertake the cultural heritage assessment as traditional knowledge holders/Traditional Owners and contemporary knowledge holders will be identified as set out above. The cultural heritage assessment will include, but not be limited to:

- Background ethnographic, historic and contemporary research of the Aboriginal people of the area, including but not limited to, past land uses, resources, customs and traditions where the information is available to examine connection to country throughout the past and into the future;
- Discussions with knowledge holders and those who identify themselves as having an interest in the project, taking into account that Indigenous people may have differing degrees of knowledge about heritage places and their importance;
- Discussion will also take place during the survey (as well as throughout the project) as requested by some knowledge holders;
- An additional focused field survey if required to identify, locate and record any Indigenous heritage values of objects and/or places in a manner that is appropriate;
- The writing of a cultural heritage assessment report with the knowledge holders and RAPs ensuring the content is appropriate and sensitive to the knowledge holders; and
- All detailed information provided will be confidential unless otherwise stipulated by the knowledge holders, however, in order to protect any Indigenous heritage values of objects and/or places, their location must be known (not necessarily documented in detail or mapped) in order to discuss the appropriate mitigation and management options and recommendations.

5.7 FORMS

You will find forms attached for your connivance. However, if you prefer to use your own please feel free to do so. Please ensure that these are either filled out in full or your own forms/letters answer the questions and return to MCH no later than 2nd October 2019.

6 ARCHAEOLOGICAL INVESTIGATION METHODS

6.1.1 OBJECTIVES

The objective of the investigation is to determine whether subsurface cultural material exists in the areas identified as having archaeological potential. The detection of surface material will drive the management recommendations and mitigation measures to ensure that any significant cultural resources are identified and protected where possible or is subject to minimal impact by the proposed development.

The Archaeological investigation will be carried out in accordance with the BCD policy - *2010*, Section 2 and the BCD policy - *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

6.1.2 ARCHAEOLOGICAL HERITAGE ASSESSMENT METHODOLOGY & REPORT

Overall, the assessment will include, but not limited to, the following;

The provision of an Archaeological Heritage Impact Assessment Report that will include:

- Project background, including project description, detailed maps, legislative context, qualifications of the investigator
- Consultation outlining the process as per the BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010
- Landscape context including, landforms, soils, geology, geomorphology, water sources, fauna and flora, history of land use and impacts and, natural impacts
- Archaeological context including review of previous regional and local work in the area, AHIMS search, summary and discussion of the local and regional character of Aboriginal land use and its material traces, occupation model and site-specific predictive model
- Results that will include the survey results (see below for proposed survey methodology), detailed descriptions of landforms (survey units), vegetation cover, exposures, land uses and disturbances, site(s) and PAD(s). It will also include any analysis and discussion
- An assessment of scientific values and significance assessment
- An impact assessment
- Management and mitigation measures
- Recommendations
- References
- Appendices will include the AHIMS results and community consultation log and communications

6.1.3 PROPOSED SURVEY METHODOLOGY

The survey methodology is in accordance with the BCD policy - *Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales 2010*, Section 2.2. This proposed methodology is subject to variation due to unforeseen field conditions/constraints.

- Survey units identified based on landforms
- Transects will be via foot with the survey team spaced at 5-10 metres apart across the entire investigation area of impact
- Ground surface visibility recorded for each survey unit and given a % rating of vegetation cover
- Exposures recorded for each survey unit given a % rating of exposure and exposure type
- Using the effective coverage and exposure information, calculate the effective survey coverage for each survey unit and the entire investigation area

- Disturbances recorded for each survey unit
- Take representative photographs of survey units
- All sites and/or PADs recorded in each survey unit and accurately mapped

Sites and their boundaries will be defined as;

- The spatial extent of the visible objects or direct evidence of their location
- Obvious physical boundaries where present such as, but not limited to, mound sites, middens, ceremonial grounds, disturbances (i.e. road, building)
- Identification by the Aboriginal community on the basis of cultural information

All sites and PADs will include, but not limited to, the following:

- Site type and content
- Survey unit (landform)
- Distance from water sources
- Vegetation cover (if any)
- Exposure (if any)
- Disturbances (if any)
- GPS co-ordinates
- Identified site boundaries
- Potential for in situ deposits
- Photographs (with a metric scale)

7 ROLES, RESPONSIBILITIES AND FUNCTIONS OF PARTIES

The roles, responsibilities and functions of all parties are outlined below and is taken from DECCW (2010).

7.1 BIODIVERSITY AND CONSERVATION DIVISION (BCD)

The Chief Executive of BCD is the decision-maker who decides to grant or refuse an Aboriginal Heritage Impact Permit (AHIP) application. If an AHIP is issued, conditions are usually attached and BCD is responsible for ensuring the AHIP holder complies with those conditions. When considering an application under Part 6 of the NPW Act, the Chief Executive will review the information provided by proponents in line with its internal policies and procedures to assess potential or actual harm to Aboriginal objects or places (DECCW, 2009).

The Environment Protection and Regulation Group (EPRG) of BCD is responsible for administering the regulatory functions under Part 6 of the NPW Act. BCD expects that proponents and Aboriginal people should:

- be aware that Part 6 of the NPW Act establishes the Chief Executive or delegate of BCD as the decision-maker; and
- recognise that the Chief Executive's (or delegates) decisions may not be consistent with the views of the Aboriginal community and/or the proponent. However, BCD will consider all relevant information it receives as part of its decision-making process.

7.2 PROPONENT

All proponents operate within a commercial environment which includes:

- strict financial and management issues, priorities and deadlines;
- the need to gain community support in order to secure any necessary approval/consent/ licence/permit to operate;
- the need for clearer processes and certainty of outcomes;
- the need for suitable access to land for the purpose of their development project;
- the need to work efficiently within the project's time, quality and cost planning and management parameters; and
- the need for culturally appropriate assessment findings relevant to their project.

Under these requirements, proponents should undertake the following:

- bring the registered Aboriginal parties or their nominated representatives together and be responsible for ensuring appropriate administration and management of the consultation process;
- consider the cultural perspectives, views, knowledge and advice of the registered Aboriginal parties involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal object(s) and/or place(s);
- provide evidence to BCD of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the registered Aboriginal parties; and
- accurately record and clearly articulate all consultation findings in the final cultural heritage assessment report.

7.3 REGISTERED ABORIGINAL STAKEHOLDERS

The interests and obligations of Aboriginal people relate to the protection of Aboriginal cultural heritage. It is only Aboriginal people who can determine who is accepted by their community as being authorised to speak for Country and its associated cultural heritage. Where there is a dispute about who speaks for Country, it is appropriate for Aboriginal people, not BCD or the proponent, to resolve this dispute in a timely manner to enable effective consultation to proceed.

Aboriginal people who can provide information about cultural significance are, based on Aboriginal lore and customs, the traditional owners or custodians of the land that is the subject of the proposed project area. Traditional owners or custodians with appropriate cultural heritage knowledge necessary to make informed decisions who wish to register as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and customs;
- recognise their responsibilities of their community, knowledge and obligations to protect and conserve their culture and heritage and to care for their traditional lands or country; and
- have the trust of their community, knowledge and understanding of their culture and permission to speak about it.

The registered Aboriginal parties should undertake the following;

- ensure the appropriate cultural knowledge holder is providing the appropriate information;
- uphold and respect the traditional rights, obligations and responsibilities of Aboriginal people within their own boundaries and not to infringe in other areas or Aboriginal people outside their own boundaries;
- consider and provide the proponent the cultural perspectives, views, knowledge and advice during the consultation process, assessing cultural significance and developing any heritage management outcomes for Aboriginal object(s) and/or place(s); and
- need to work efficiently within the project's time and provide feedback in a timely manner.

7.4 LOCAL ABORIGINAL LAND COUNCILS

The NSW Aboriginal Land Council (NSWALC) and Local Aboriginal Land Councils (LALCs) have statutory functions relevant to the protection of Aboriginal culture and heritage under the NSW Aboriginal Land Rights Act 1983. These requirements do not extend the role of NSWALC and LALCs in the significance assessment process. That is, these requirements do not provide NSWALC and/or LALCs any additional or specific decision-making role in the assessment of significance of Aboriginal object(s) and/or place(s) that are subject to an AHIP application under Part 6 of the NPW Act.

LALCs may choose to register an interest to be involved in the consultation process, or may assist registered Aboriginal parties to participate in the consultation process established by these requirements. In order to ensure effective consultation and the subsequent informed heritage assessment, LALCs are encouraged to identify and make contact with Aboriginal people who hold cultural knowledge in their area.

7.5 EMPLOYMENT

The proponent may engage a number of Aboriginal representatives from the registered parties (based on the size and nature of the project) to participate and assist in the fieldwork component of this project. If you would like to be considered for paid field work please answer the selection criteria attached and ensure you attach certificates of currency for the relevant insurances, CV(s), any certificates and references. MCH will then pass this information onto the proponent for their consideration to make the selection for

fieldwork participants should they wish to do so. MCH will ensure all Aboriginal parties are invited to participate in fieldwork; however paid participation is determined by the proponent.

7.6 FORMS

You will find forms attached for your connivance. However, if you prefer to use your own please feel free to do so. Please ensure that these are either filled out in full or your own forms/letters answer the questions and return to MCH no later than 2nd October 2019.

REFERENCES

Australian Heritage Commission. 2002. Ask First. A Guide to respecting Indigenous Heritage Places and Values.

Australian International Council on Monuments and Sites (ICOMOS). 2013a. The Burra Charter.

Australian ICOMOS. 2013b. The Practice Note – Understanding and assessing cultural significance

Australian ICOMOS. 2013c. The Practice Note – The Burra Charter and archaeological practice

Australian ICOMOS. 2013d. The Practice Note – The Burra Charter and Indigenous cultural heritage management

Department of Environment, Climate Change and Water (DECCW). 2010a. *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.* Department of Environment, Climate Change and Water NSW, Sydney.

Department of Environment, Climate Change and Water (DECCW). 2010b. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Department of Environment, Climate Change and Water NSW, Sydney.

Appendix A

MCH would like to clearly state that, should you wish to provide feedback in another form, you are encouraged to do so. You are under no obligation to complete the current form.

However, should you wish to use this form, please complete, sign and return to MCH using one of the following;

Fax: 4952 5501

e-mail: mcheritage@iprimus.com.au

Postal address: MCH

PO Box 166

Adamstown, NSW 2289

ABORIGINAL STAKEHOLDER SITE OFFICER APPLICATION

Position description

A site officer must demonstrate that they have satisfactorily participated in previous archaeological fieldwork with an archaeologist. A trainee site officer does not need to demonstrate previous archaeological experience. Site officers must be able to:

- undertake direction from the project archaeologist
- work in a range of climates wearing protective clothing
- work in teams with a wide range of people
- identify a broad range of Aboriginal objects across the landscape

To qualify as a site officer, appropriate training in identifying Aboriginal objects must have been undertaken (such as the BCD sites awareness training course, or other relevant secondary or tertiary studies) or equivalent knowledge or experience must be demonstrated.

The duties of the site officer under the direction of the project archaeologist may include, but not limited to:

- walking the project area
- meeting general and site-specific Occupational Health and Safety requirements

Selection criteria

The proponent will offer positions based on the following key selection criteria:

- an individual's ability to undertake the tasks specified above
- an individual's availability to undertake the activity (physically able to undertake field work)
- an individual's experience in undertaking similar activities. Applications may be subject to a reference check
- individuals with demonstrated cultural knowledge relevant to the local area
- individuals who can demonstrate they can communicate the results of the field work back to their managers and RAPs
- In addition to a consideration of the key selection criteria, the Proponent may give preference to applicants who live locally.

The proponent is under no obligation to offer site officer positions based on an individual's association with a cultural group or area. The proponent makes no guarantee that registered parties will be engaged to undertake archaeological field activities. The number of site officer positions available will be based on need as described in the archaeological methodology. However, MCH will ensure all registered stakeholders are invited to participate in the survey regardless of engagement arrangements between the stakeholder(s) and the proponent. Applicants will be notified whether they have been successful or unsuccessful in their application.

Engagement

The Proponent selects and has final approval on who will be engaged as a site officer. Successful applicants will be engaged to provide the services through a written contract that will be provided at a later date. The proponent will only engage Service Providers with NSW workers compensation insurance, public liability insurance, and comprehensive motor vehicle insurance or third party property damage insurance.

Payment

The proponent will pay the Service Provider at a rate that will be based on the project budget. The quoted rate is the rate to be paid by the Proponent to the Service Provider - not to the individual site officer/trainee site officer. The site officer/trainee site officer will be paid by the Service Provider at a rate agreed to by the Service Provider and the site officer/trainee site officer. Payment will only be made for the provision of the services (actual hours worked), and not for the time spent travelling to and from site. Payment will be made upon the receipt of a cultural heritage report and receipt of your response to the draft report.

ABORIGINAL SITE OFFICER APPLICATION FORM

25 Mulloway Road, Chain Valley Bay

An Aboriginal site officer application form must be filled out for each individual seeking engagement as a site officer.	
Name of organisation (if relevant)	
Name	
Contact number	
Mailing address	
Email address	
Fax	
Position applied for	Site officer ☐ Trainee Site Officer ☐
Please list any formal qualifications or relevant experience to the position applied for (attach documentation as required)	
Please list any previous archaeological, sites, survey, excavation or other relevant experience (attach additional sheets as required)	
Please provide the contact details of at least one archaeologist (other than the project archaeologist) who can be contacted as a referee	

INSURANCES		
Public Liability	Expiry date:	(attach certificate of currency)
Worker Compensation	Expiry date: :	(attach certificate of currency)
Comprehensive Motor Vehicle	Expiry date: :	(attach certificate of currency)

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork. MCH may have received copies previously, however, they must be provided for each project.

OCCUPATIONAL Health & SAFETY (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements.

This includes high visibility clothing, hat, sunscreen and steel caped boots. You will be advised of any additional requirements.

This also includes appropriate and acceptable behaviour at all times.

Failure to comply will prevent you from participating in the field work.

COMMENTS ON PROPOSED METHODOLOGY

Mulloway Road, Chain Valley Bay

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **agree to the methodology** outlined by MCH in relation to gathering information about cultural significance:

_____

_____

Signed: _____ Date: _____

Position within organisation: _____

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **do not agree to the methodology** outlined by MCH in relation to gathering information about cultural significance for the following reasons (*please explain your reasons for disagreeing):*

_____

_____

I would like to suggest the following (please provide your reasoning):_____

_____

Signed: _____ Date: _____

Position within organisation: _____

Company Name):_____

Contact:_____

Postal address:_____

_____

Mobile No:_____

E-Mail:_____

Date:_____

I would like to provide knowledge about cultural significance using the following method(s). Please tick your preferred method(s):

1) Discussion in the field during the survey
2) Written documentation (letter, e-mail, fax)
3) Meeting to discuss and/or provide written documentation
4) Formal interview with specific questions/answers and/or discussions
5) Phone conversation
6) Skype conversation
7) Using the attached form/questioner

Other: Please provide details:

_____

_____

_____

_____

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

8 October 2019

Awabakal Traditional Owners Aboriginal Corporation
Kerrie Brauer
Kerrie@awabakal.com.au

Dear Kerrie,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3) – Survey invitation and letter of engagement- Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

The proponent (Vivacity Property Pty Ltd) has received a number of applications and after careful consideration has selected whom they wish to engage in a paid capacity. The proponent and MCH would like to advise that your application for paid participation has been successful. MCH would like to organise the survey for the above-named project for the 17th October 2019 starting at 8am at 25 Mulloway Road, Chain Valley Bay. We anticipate work will be complete within half a day, however, please be advised this time may change.

As part of the assessment process the proponent require an appropriate person from your organisation to participate in the survey of the study area to identify known or potential cultural heritage features. A cultural heritage report must be prepared following the survey and receipt of the draft archaeological report within the required 28 days review period. The cultural heritage report will identify known or potential Aboriginal objects or places and/or any other cultural heritage matters that may be affected by the project.

Vivacity Property Pty Ltd and MCH wishes to reiterate our intent to positively engaging with the local Aboriginal community. In this spirit an invitation has been extended to all registered applicants to attend the survey. If you accept the terms outlined in the Letter of Engagement (attached) please sign the Letter of Engagement and return to McCardle Cultural Heritage. Participation in the program is dependent on the receipt of the Letter of engagement and insurance certificate of currencies.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the BCD requirements, please ensure that any items that you or your group deem confidential are made apparent to your field representative prior to field work to ensure that information remains confidential if required. Failure to disclose that information is confidential may result in the information being included in the report.

Should you have any questions regarding these terms and conditions or the project please contact myself on 0412 702 396.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Aboriginal Site Officer/Trainee Site Officer

Letter of Engagement

Vivacity Property Pty Ltd wishes to engage Awabakal Traditional Owners Aboriginal Corporation (Service Provider) to provide one Site Officer to undertake an archaeological survey of the proposed development at 25 Mulloway Road, Chain Valley Bay.

The proponent and Service Provider agree to the terms and conditions of the engagement as follows:

Services
The Service Provider will engage one Site Officer to undertake the following:

- Archaeological survey of the project area
- a cultural heritage report and invoice within 28 days of receiving the draft report from MCH

Fees
The proponent will pay the following Fees to the Service Provider for Services:

- $100.00 + GST per person per hour for work undertaken by a Site Officer (inclusive of travel)

Payment will be within 28 days of receipt of a correct invoice and cultural heritage report. Invoices are to be provided at the end of the month.

Invoices are to be addressed to:
Vivacity Property Pty Ltd
C/o: MCH
mcheritage@iprimus.com.au

Time sheets
The Service provider must ensure that the Site Officers sign a time sheet at the start and finish of each day the Services are provided. Fees will not be paid unless time sheets for each Site Officer has been completed. The archaeologist will have a time sheet that may be used.

Work performance
The Service Provider must ensure that the Site Officers are fit for work, undertake the Services in a timely manner, with reasonable care, skill and professionalism and in accordance with all applicable laws and any reasonable directions or requirements made by the proponent and/or MCH.

Absences
All field staff must call MCH the evening before work to notify their absence for the following day and organise for a replacement. If no notice is provided, that staff members place in the field team will be suspended until MCH are notified they will be back at work. It is the responsibility of the Service Provider to organise a replacement site officer from the list of persons provided to MCH at the start of the project.

Proponent and MCH property
All materials and equipment provided by MCH or the proponent during the term of engagement remain the property of MCH or the proponent and must be returned upon completion of the Services or termination of the agreement.

Confidentially
All information provided by MCH or the proponent to the Service Provider and/or Site Officer in relation to the services or the business or operations of the proponent and MCH are confidential. The Service Provider will ensure it and the Site Officer keep such information confidential at all times (including after the completion of the Services) and must not disclose it to any other person without the prior written consent from the proponent and/or MCH.

OH&S Requirements
Before commencement of work you must provide MCH with certificate of currencies for Workers Comp and Public Liability. Field representatives participating in the survey will be required to wear steel cap boots, long pants and long shirt (hi-visibility) with appropriate sun protection including a hat. It is recommended that participants bring adequate amounts of food and water for the day.

Early termination
The proponent reserves the right to terminate this agreement at any time by giving 1-week written notice to the Service Provider. If the proponent terminates this agreement under this clause, then, subject to satisfactory performance of the Services, the proponent will pay the Service provider a proportionate part of the Fee according to the amount or proportion of Services supplied up to the date of termination.

No subcontracting
The Service Provider must not subcontract the provision of the Services without the proponent's prior written consent.

Insurances
The Service Provider must provide certificates of currency for Workers Comp, Public Liability and Comprehensive Motor vehicle insurances prior to the Services being provided.

Indemnity and release
The Service Provider undertakes the Services at its sole risk and the proponent and MCH will not be liable for any loss, damage, injury or death sustained by any person as a result of the Services being provided.

The Service provider indemnifies and releases the proponent and MCH against any loss the proponent or MCH suffers or any claims made against the proponent or MCH by any person arising out of the provisions of the Services except to the extent that any loss or claims arise from any negligence by the proponent or MCH.

Variations
No changes to these terms can be made without the prior written agreement with the proponent.

Exclusion of other terms
This letter contains the sole agreement of the parties and all other terms are excluded.

If you agree that the contents of this letter correctly set out the terms of engagement between the proponent and your organisation then please sign both copies, keep one for yourself, and return the other signed copy to MCH within 10 days.

Acceptance (25 Mulloway Road, Chain Valley Bay)	
Signed by Awabakal Traditional Owners Aboriginal Corporation	
I/we agree to the terms set out in this letter and acknowledge that it forms a binding legal contract. I/we declare that I/we are authorised to sign this letter on behalf of Awabakal Traditional Owners Aboriginal Corporation. Please provide your ABN:	
Signature of Witness	**Signature of authorised person**
Print name of Witness	**Print name of authorised person**
	Print title and position of authorised person
Date:	**Date:**

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

8 October 2019

Darkinjung Local Aboriginal Land Council
CEO
darkinjung@dlalc.org.au

Dear CEO,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3) – Survey invitation and letter of engagement- Proposed manufactured home estate at 45 Mulloway Road, Chain Valley Bay

The proponent (Vivacity Property Pty Ltd) has received a number of applications and after careful consideration has selected whom they wish to engage in a paid capacity. The proponent and MCH would like to advise that your application for paid participation has been successful. MCH would like to organise the survey for the above-named project for the 17th October 2019 starting at 8am at 25 Mulloway Road, Chain Valley Bay. We anticipate work will be complete within half a day, however, please be advised this time may change.

As part of the assessment process the proponent require an appropriate person from your organisation to participate in the survey of the study area to identify known or potential cultural heritage features. A cultural heritage report must be prepared following the survey and receipt of the draft archaeological report within the required 28 days review period. The cultural heritage report will identify known or potential Aboriginal objects or places and/or any other cultural heritage matters that may be affected by the project.

Vivacity Property Pty Ltd and MCH wishes to reiterate our intent to positively engaging with the local Aboriginal community. In this spirit an invitation has been extended to all registered applicants to attend the survey. If you accept the terms outlined in the Letter of Engagement (attached) please sign the Letter of Engagement and return to McCardle Cultural Heritage. Participation in the program is dependent on the receipt of the Letter of engagement and insurance certificate of currencies.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the BCD requirements, please ensure that any items that you or your group deem confidential are made apparent to your field representative prior to field work to ensure that information remains confidential if required. Failure to disclose that information is confidential may result in the information being included in the report.

Should you have any questions regarding these terms and conditions or the project please contact myself on 0412 702 396.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Aboriginal Site Officer/Trainee Site Officer

Letter of Engagement

Vivacity Property Pty Ltd wishes to engage Darkinjung Local Aboriginal Land Council (Service Provider) to provide one Site Officer to undertake an archaeological survey of the proposed development at 25 Mulloway Road, Chain Valley Bay.

The proponent and Service Provider agree to the terms and conditions of the engagement as follows:

Services
The Service Provider will engage one Site Officer to undertake the following:

- Archaeological survey of the project area
- a cultural heritage report and invoice within 28 days of receiving the draft report from MCH

Fees
The proponent will pay the following Fees to the Service Provider for Services:

- $100.00 + GST per person per hour for work undertaken by a Site Officer (inclusive of travel)

Payment will be within 28 days of receipt of a correct invoice and cultural heritage report. Invoices are to be provided at the end of the month.

Invoices are to be addressed to:
Vivacity Property Pty Ltd
C/o: MCH
mcheritage@iprimus.com.au

Time sheets
The Service provider must ensure that the Site Officers sign a time sheet at the start and finish of each day the Services are provided. Fees will not be paid unless time sheets for each Site Officer has been completed. The archaeologist will have a time sheet that may be used.

Work performance
The Service Provider must ensure that the Site Officers are fit for work, undertake the Services in a timely manner, with reasonable care, skill and professionalism and in accordance with all applicable laws and any reasonable directions or requirements made by the proponent and/or MCH.

Absences
All field staff must call MCH the evening before work to notify their absence for the following day and organise for a replacement. If no notice is provided, that staff members place in the field team will be suspended until MCH are notified they will be back at work. It is the responsibility of the Service Provider to organise a replacement site officer from the list of persons provided to MCH at the start of the project.

Proponent and MCH property
All materials and equipment provided by MCH or the proponent during the term of engagement remain the property of MCH or the proponent and must be returned upon completion of the Services or termination of the agreement.

Confidentially
All information provided by MCH or the proponent to the Service Provider and/or Site Officer in relation to the services or the business or operations of the proponent and MCH are confidential. The Service Provider will ensure it and the Site Officer keep such information confidential at all times (including after the completion of the Services) and must not disclose it to any other person without the prior written consent from the proponent and/or MCH.

OH&S Requirements
Before commencement of work you must provide MCH with certificate of currencies for Workers Comp and Public Liability. Field representatives participating in the survey will be required to wear steel cap boots, long pants and long shirt (hi-visibility) with appropriate sun protection including a hat. It is recommended that participants bring adequate amounts of food and water for the day.

Early termination
The proponent reserves the right to terminate this agreement at any time by giving 1-week written notice to the Service Provider. If the proponent terminates this agreement under this clause, then, subject to satisfactory performance of the Services, the proponent will pay the Service provider a proportionate part of the Fee according to the amount or proportion of Services supplied up to the date of termination.

No subcontracting
The Service Provider must not subcontract the provision of the Services without the proponent's prior written consent.

Insurances
The Service Provider must provide certificates of currency for Workers Comp, Public Liability and Comprehensive Motor vehicle insurances prior to the Services being provided.

Indemnity and release
The Service Provider undertakes the Services at its sole risk and the proponent and MCH will not be liable for any loss, damage, injury or death sustained by any person as a result of the Services being provided.

The Service provider indemnifies and releases the proponent and MCH against any loss the proponent or MCH suffers or any claims made against the proponent or MCH by any person arising out of the provisions of the Services except to the extent that any loss or claims arise from any negligence by the proponent or MCH.

Variations
No changes to these terms can be made without the prior written agreement with the proponent.

Exclusion of other terms
This letter contains the sole agreement of the parties and all other terms are excluded.

If you agree that the contents of this letter correctly set out the terms of engagement between the proponent and your organisation then please sign both copies, keep one for yourself, and return the other signed copy to MCH within 10 days.

Acceptance (25 Mulloway Road, Chain Valley Bay)	
Signed by Darkinjung Local Aboriginal Land Council	
I/we agree to the terms set out in this letter and acknowledge that it forms a binding legal contract. I/we declare that I/we are authorised to sign this letter on behalf of Darkinjung Local Aboriginal Land Council. **Please provide your ABN:**	
Signature of Witness	**Signature of authorised person**
Print name of Witness	**Print name of authorised person**
	Print title and position of authorised person
Date:	**Date:**

McCARDLE
CULTURAL HERITAGE

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mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

20 October 2019

Awabakal Traditional Owners Aboriginal Corporation
Kerrie Brauer
Kerrie@awabakal.com.au

Dear Kerrie,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3 & 4 – Review of Draft Cultural Heritage Assessment - Proposed 45 Mulloway Road, Chain Valley Bay

Please find enclosed a copy of the draft Aboriginal Cultural Heritage Assessment (ACHA) for the above-named project for your review.

The cultural heritage Assessment includes information provided by the knowledge holders and is included with their permission. As required by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 3 (S. 4.3.5; 4.3.6; 4.3.7) and Stage 4 (S. 4.4.1; 4.4.2; 4.4.3) and based on the information provided by knowledge holders throughout the project, the cultural significance will be included in the final report.

MCH would like to provide further opportunity to provide your further input and request your comments on the draft ACHA. Additionally, any concerns you may have are also important and we would like the opportunity to address any concerns you may have.

As outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.3) MCH would appreciate your input and your comments on the draft reports no later than C.O.B. 18th November 2019.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the BCD requirements, please ensure that if any response to the draft report is deemed confidential that this is either stated at the beginning of a conversation or stamped/written on each piece of paper communicate.

Please note that in order to adhere to time constraints, the absence of a response by the requested timeline, will be taken by the proponent as your indication that your organisation has no comments regarding the draft ACHA.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

20 October 2019

Darkinjung Local Aboriginal Land Council
CEO
darkinjung@dlalc.org.au

Dear CEO,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3 & 4 – Review of Draft Cultural Heritage Assessment - Proposed 45 Mulloway Road, Chain Valley Bay

Please find enclosed a copy of the draft Aboriginal Cultural Heritage Assessment (ACHA) for the above-named project for your review.

The cultural heritage Assessment includes information provided by the knowledge holders and is included with their permission. As required by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 3 (S. 4.3.5; 4.3.6; 4.3.7) and Stage 4 (S. 4.4.1; 4.4.2; 4.4.3) and based on the information provided by knowledge holders throughout the project, the cultural significance will be included in the final report.

MCH would like to provide further opportunity to provide your further input and request your comments on the draft ACHA. Additionally, any concerns you may have are also important and we would like the opportunity to address any concerns you may have.

As outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.3) MCH would appreciate your input and your comments on the draft reports no later than C.O.B. 18th November 2019.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the BCD requirements, please ensure that if any response to the draft report is deemed confidential that this is either stated at the beginning of a conversation or stamped/written on each piece of paper communicate.

Please note that in order to adhere to time constraints, the absence of a response by the requested timeline, will be taken by the proponent as your indication that your organisation has no comments regarding the draft ACHA.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

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mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

18 November 2019

Awabakal Traditional Owners Aboriginal Corporation
Kerrie Brauer
Kerrie@awabakal.com.au

Dear Kerrie,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 4 –Final Cultural Heritage Assessment - Proposed 45 Mulloway Road, Chain Valley Bay

MCH and Vivacity Property Pty Ltd (Proponent) would like to take this opportunity to thank you for your involvement in the above-named project. Your time and input have been instrumental throughout the project

As outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.5) please find enclosed copy of the final Aboriginal Cultural Heritage Assessment for your records.

We look forward to continue working with you in the future.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
mcheritage@iprimus.com.au
P: 0412 702 396

mcheritage.com.au

18 November 2019

Darkinjung Local Aboriginal Land Council
CEO
darkinjung@dlalc.org.au

Dear CEO,

RE: BCD Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 4 –Final Cultural Heritage Assessment - Proposed 45 Mulloway Road, Chain Valley Bay

MCH and Vivacity Property Pty Ltd (Proponent) would like to take this opportunity to thank you for your involvement in the above-named project. Your time and input have been instrumental throughout the project

As outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.5) please find enclosed copy of the final Aboriginal Cultural Heritage Assessment for your records.

We look forward to continue working with you in the future.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

APPENDIX B

AHIMS search results

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Chain Valley Way

Client Service ID : 439440

Penny Mccardle

Po Box 166
Adamstown New South Wales 2289
Attention: Penny Mccardle

Email: mcheritage@iprimus.com.au

Date: 02 August 2019

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 364200 - 370200, Northings : 6325000 - 6331000 with a Buffer of 50 meters. Additional Info : assessment, conducted by Penny Mccardle on 02 August 2019.

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.

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

20	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Chain Valley Way

Client Service ID : 439440

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-7-0178	Hembula Creek - Scarred Tree 1&2;HC-ST 1&2;	AGD	56	366800	6330400	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Mr.Gavin Newton					**Permits**		
45-7-0181	Chain Valley Bay 1	AGD	56	366150	6329600	Open site	Valid	Shell : -, Artefact : -	Midden	101093
	Contact	**Recorders**	L.M Nelson					**Permits**		
45-7-0290	Gwandalan 1	AGD	56	368088	6329979	Open site	Valid	Shell : -		
	Contact	**Recorders**	Doctor.Tim Owen,ERM Australia Pty Ltd- Sydney CBD					**Permits**		
45-7-0079	Crangan Bay;Stranger Gully;	AGD	56	368450	6330750	Open site	Valid	Shell : -, Artefact : -	Midden	
	Contact	**Recorders**	ASRSYS					**Permits**		
45-7-0254	gwanddalan 1	GDA	56	368088	6329979	Open site	Valid	Shell : -		
	Contact	**Recorders**	Doctor.Tim Owen					**Permits**		
45-7-0339	CV 001	GDA	56	364943	6329478	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mrs.Rebecca Newell,EMGA Mitchell McLennan					**Permits**		
45-7-0374	Gwan IF1	GDA	56	368302	6331050	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**		
45-7-0389	LM 1	GDA	56	366147	6327061	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**		
45-3-0334	Tiembula Creek Midden;Tiembula Creek;	AGD	56	366730	6330420	Open site	Valid	Shell : -, Artefact : -	Midden	1076
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-7-0080	Mannering Park;	AGD	56	364780	6328890	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	101093
	Contact	**Recorders**	ASRSYS					**Permits**		
45-7-0269	CV-06-09	GDA	56	368061	6328867	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0271	CV-08-09	GDA	56	366587	6330975	Open site	Valid	Shell : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0272	CV-09-09	GDA	56	366650	6330868	Open site	Valid	Shell : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0273	CV-10-09	GDA	56	366875	6330868	Open site	Valid	Shell : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0274	CV-12-09	GDA	56	367290	6330372	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0275	CV-14-09	GDA	56	367468	6330191	Open site	Valid	Shell : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		

Report generated by AHIMS Web Service on 02/08/2019 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 364200 - 370200, Northings : 6325000 - 6331000 with a Buffer of 50 meters. Additional Info : assessment. Number of Aboriginal sites and Aboriginal objects found is 20

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Chain Valley Way

Client Service ID : 439440

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-7-0276	CV-15-09	GDA	56	366304	6329303	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0277	CV-16-09	GDA	56	366335	6329635	Open site	Valid	Shell : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0278	CV-17-09	GDA	56	366273	6329369	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	Mr.Geordie Oakes					**Permits**		
45-7-0344	St Brigids Individual Find 1	GDA	56	367087	6327096	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Ms.Sharon Hodgetts					**Permits**	3704	

Report generated by AHIMS Web Service on 02/08/2019 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 364200 - 370200, Northings : 6325000 - 6331000 with a Buffer of 50 meters. Additional Info : assessment. Number of Aboriginal sites and Aboriginal objects found is 20