



# Anna Bay Sand Quarry

## 4226 Nelson Bay Rd Anna Bay

### Historic Heritage Impact Assessment

Prepared for Hay Enterprises (NSW) Pty Ltd

1 March 2018

## Document control

Project no.:	4017
Project client:	Hay Enterprises (NSW) Pty Ltd
Project office:	Sydney
Document description:	Heritage impact assessment
Project Manager:	Renée Regal
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Internal review:	Duncan Jones
Document status:	Draft
Local Government Area:	Port Stephens

## Document revision status

Authors	Revision number	Internal review	Date issued
Viki Gordon and Caitlin Marsh	D 01	Duncan Jones	22 February 2018
Caitlin Marsh	D 02	Duncan Jones	1 March 2018

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*Cover photograph: View north east along Mulgoa Road (Niche, 2017)*

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## Executive Summary

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Tattersall Lander is preparing an Environmental Impact Statement (EIS) on behalf of Hay Enterprises NSW Pty Ltd (the proponent) to facilitate the development of a sand quarry behind Stockton Beach in Anna Bay. The Anna Bay Sand Quarry has been designated as local development under Part 4 of the NSW Environmental Planning and Assessment Act, 1979 (EP&A Act) (the Project). As a Part 4 development, Secretary's Environmental Assessment Requirements were issued (SEAR 1172) which contain a condition to identify historic heritage in the vicinity of the development and assess the likelihood and significance of impacts on heritage items (if any).

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by Tattersall Lander (the project manager) to undertake the present historic heritage assessment of the proposed development of a sand quarry over part of Lot 4266 Nelson Bay Rd, Anna Bay NSW (the 'subject site').

The subject site has been used as a small-hold farm property since European settlement in the region in the mid nineteenth century. The subject site is located abutting sand dunes, which are connected to the Port Stephens Local Environmental Plan (LEP) listed "Stockton Beach Dune System", an item of local heritage significance. The heritage curtilage for this item terminates approximately 3km to the west of the subject site. Also within two kilometres of the subject site are the following heritage locally listed heritage items: the Birubi Point Cemetery (LEP item I2). The subject site is also located two kilometres from the listed Aboriginal Place at Birubi Point. The subject site is also located to the east of the second site of the Hannah (later called Anna) Bay School building, but this is outside the curtilage of the subject site.

Due to the distance of the proposed activity from the listed heritage items, it has been concluded that no direct, indirect or archaeological impacts are likely to affect the surrounding heritage items. There are no further non-Aboriginal (historic) heritage constraints for the project to proceed.

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# 1. Introduction

## 1.1 Project background and aims

Tattersall Lander is preparing an Environmental Impact Statement (EIS) on behalf of Hay Enterprises NSW Pty Ltd (the proponent) to facilitate the development of a sand quarry behind Stockton Beach in Anna Bay. The Anna Bay Sand Quarry has been designated as local development under Part 4 of the NSW Environmental Planning and Assessment Act, 1979 (EP&A Act) (the Project). As a Part 4 development, Secretary's Environmental Assessment Requirements were issued (SEAR 1172) which contain a condition to identify historic heritage in the vicinity of the development and assess the likelihood and significance of impacts on heritage items (if any).

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by Tattersall Lander (the project manager) to undertake the present historic heritage assessment of the proposed development of a sand quarry over part of Lot 4266 Nelson Bay Rd, Anna Bay NSW (the 'subject site').

This historic heritage assessment aims to satisfy the provisions of the Secretary's Environmental Assessment Requirements (SEARs 1172). The assessment seeks to meet the SEARs requirement for

"Identification of Historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items, having regard to the relevant and guidelines listed in Attachment 1."

The assessment has been prepared in accordance with the *NSW Heritage Manual*, particularly the *Statements of Heritage Impact* guidelines, published by the NSW Heritage Office and Department of Urban Affairs & Planning (1996, revised 2002), originally developed as part of the *NSW Heritage Manual*.

## 1.2 Project location

The project location is situated within the coastal semi-rural locality of Anna Bay, 12 km south west of Nelson Bay and 25 km north east of Newcastle Airport. The subject site is located in the Parish of Tomaree and in the County of Gloucester in the Port Stephens Council Local Government Area (Figure 1).

The subject site for the purposes of this assessment is defined as part of Lot 591 in Deposited Plan 1191380 (known as 4226 Nelson Bay Rd, Anna Bay). The location and extent of the subject site is shown in Figure 1 and Figure 2.

## 1.3 Proposed activity

The Proponent intends to establish a sand quarry to extract a maximum of 50,000 cubic metres of sand in any year over a 30 year period on the following basis:

- Sand will be extracted to ground level within the designated sand quarrying area (see Figure 2). Sand will be removed as it moves in a transgressional sand sheet from the dune system into the transmission line within the subject site. No ground surface disturbance will occur as a result of the quarrying activity.
- A front end-loader will load sand to trucks-and-dogs and remove directly from site per demand:
  - Approximately 910 cubic metres of sand per day up to a maximum threshold of 50,000 cubic metres a year (for a maximum of 30 years). This equates to approximately 55 full days a year of sand movement undertaken by 35 tonne trucks at a rate of 40 trucks per day.
- As a result of current sand movement encroaching into the subject site, vegetation is being smothered as the sand moves north. While the sand mine is in operation vegetation will be removed from the

dune and then mulched and used as ground cover within the caretaker's residence/ machinery shed compound as soil improver.

- A Caretaker's residence and machinery shed would be constructed for the project, the location of which is indicated in Figure 2. The buildings would be constructed on cement slabs for minimal ground disturbance. The land where the new buildings would be constructed will need to be primary cleared of native vegetation.
- Any vegetation removed for the purposes of construction of new buildings, intersection upgrades and site access improvements would be mulched on site and redirected to the area around the caretaker's residence/site office and machinery shed for soil improvement purposes.
- The existing access road will be widened to up to 6 m and consist of basic gravel construction (unsealed) with adequate drainage; limited ground disturbance is expected for minor drainage purposes. There is no proposal to excavate into the existing road as fill will be used to level the road.

## 1.4 Project scope and report outline

To complete this historic heritage assessment, the following tasks were undertaken:

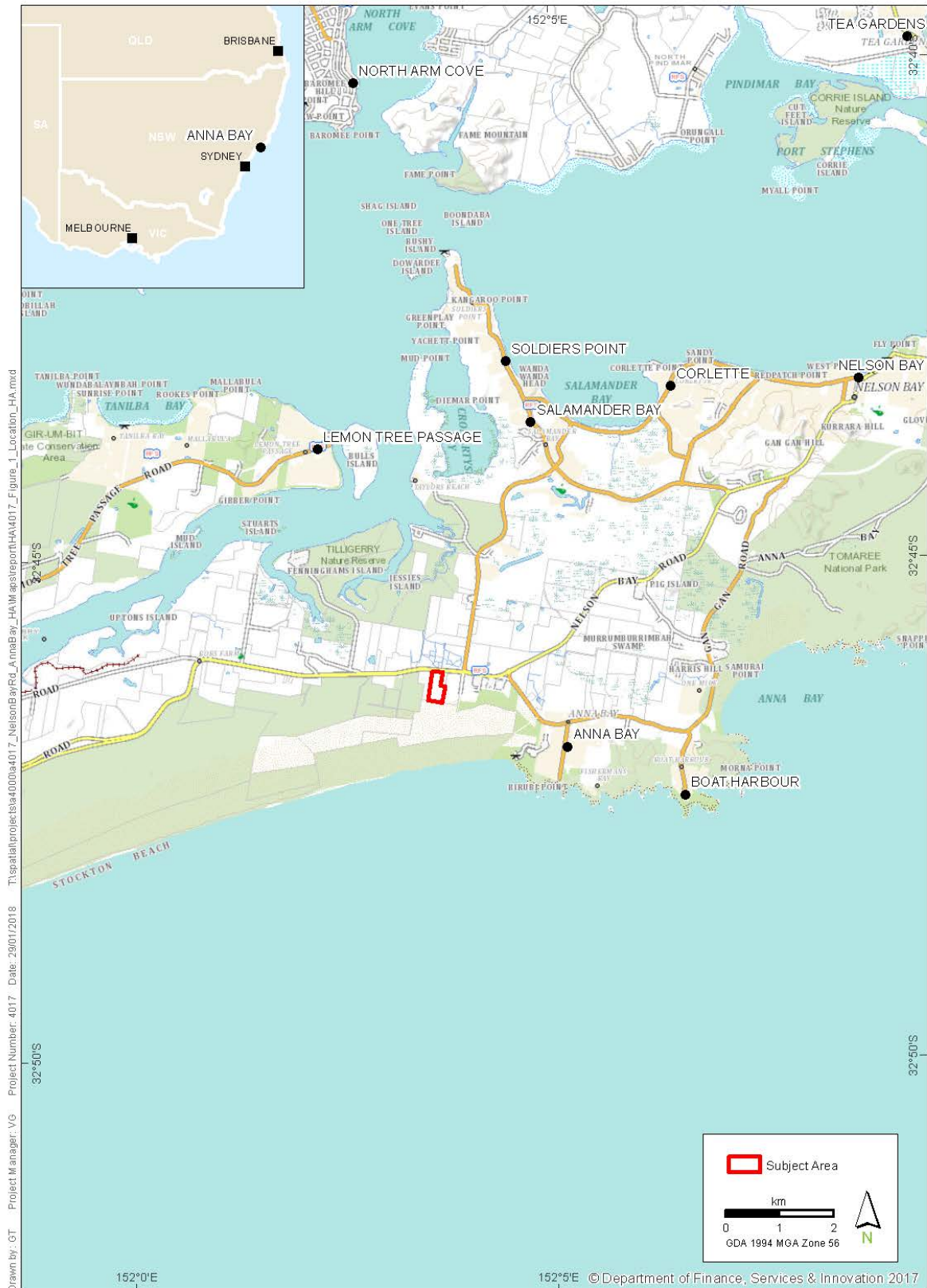
- Identification of relevant State and local heritage planning controls that would be relevant to the Project (Section 2).
- Limited historical research to understand the past land use and heritage values of the subject site and surrounding area (Section 3).
- Identification of significance (Section 4).
- Site inspection of the subject site to assess any potential impacts (Section 5).
- Impact assessment of the proposed development on the heritage values and significance of the Stockton Beach Dune System (Section 6)
- Provision of management recommendations (Section 7).

## 1.5 Authorship and acknowledgements

This report was written by Caitlin Marsh (Heritage Consultant, Niche) with input and review by Duncan Jones (Senior Heritage Consultant, Niche).



Figure 1: General location of the subject site.



Suburb: Anna Bay, LGA: Port Stephens Council, Parish: Tomaree

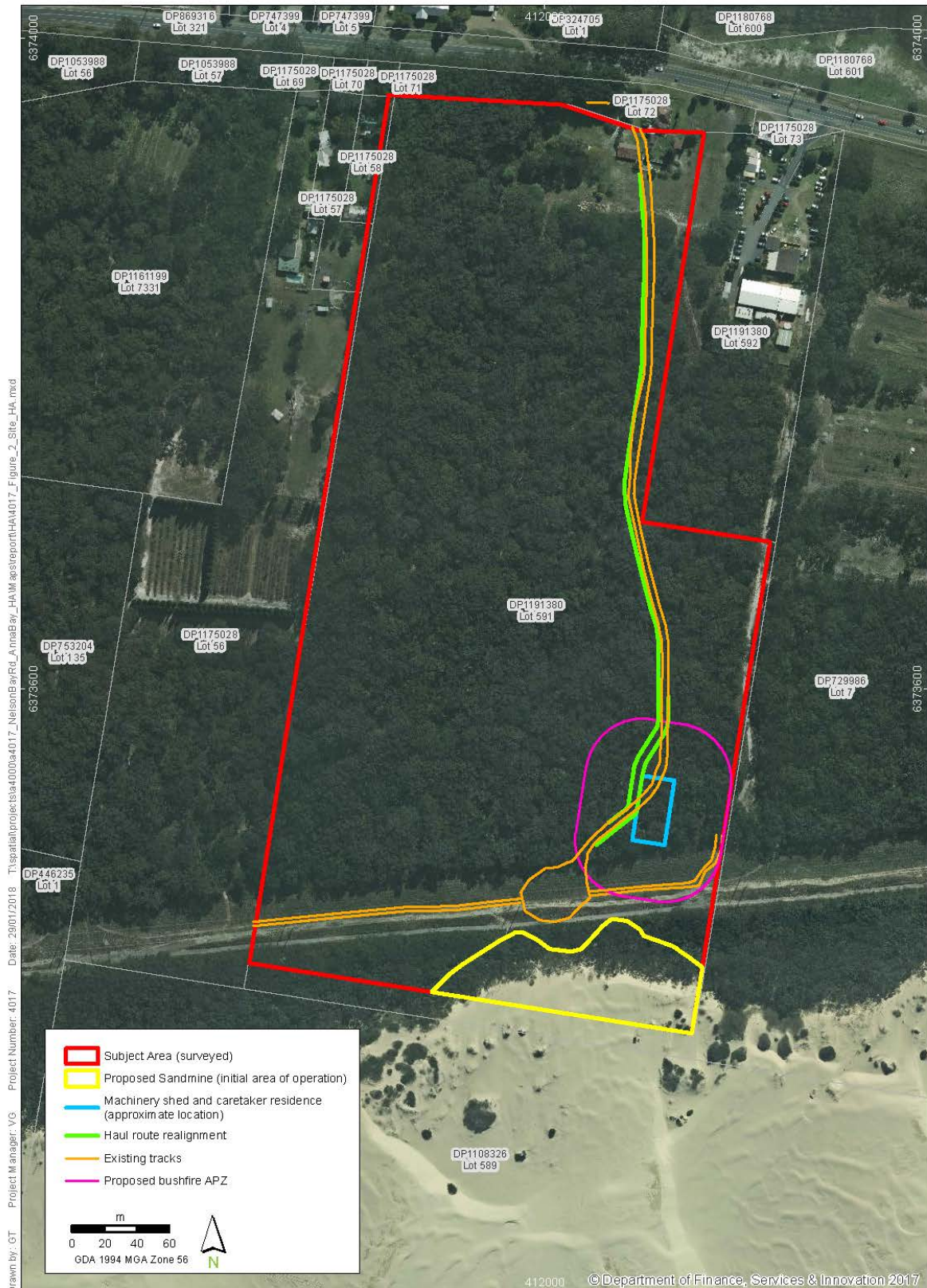
Location map

Anna Bay Sand Quarry Historic Heritage Assessment

FIGURE 1



**Figure 2: Location and Extent of the Subject site**



Suburb: Anna Bay, LGA: Port Stephens Council, Parish: Tomaree

**Subject Area**

**Anna Bay Sand Quarry Historical Heritage Assessment**

**FIGURE 2**

Imagery: (c) LPI 2012-08-19

## 2. Regulatory and Assessment Framework

### 2.1 Preamble

The following subsections present a summary of relevant State and local legislation and associated planning instruments designed to conserve significant heritage items and their values. The results of heritage register searches undertaken on 1 February, 2018 are also presented in the relevant subsections and are shown in Figure 3.

#### 2.1.1 National and Commonwealth Heritage Registers

Under the EPBC Act Amendments (No. 88, 2003), two mechanisms have been created for the protection of heritage places of National significance

(<http://www.environment.gov.au/heritage/places/national/index.html>) – the National Heritage List (NHL) and the Commonwealth Heritage List (CHL). The NHL provides protection to places of cultural significance to the nation of Australia, while the CHL comprises natural, Aboriginal and historic heritage places owned and controlled by the Commonwealth.

The Register of the National Estate (RNE) is a non-statutory list of important places maintained by the Commonwealth as a publicly available archive and educational resource. The existence of an entry for a place in the RNE does not in itself create a requirement to protect the place under Commonwealth law. Nevertheless, information in the RNE may continue to be current and may be relevant to decisions about protection and management.

The Australian Heritage Database (AHD) is maintained by the Department of Environment and Energy (DoEE). The AHD contains includes records of CHL, NHL and RNE places.

A search of the AHD was undertaken on 31 January 2018. There are no items within the subject site listed on CHL or the NHL. One item adjacent to the subject site is listed on the RNE:

**Table 1: National heritage register results in proximity to the subject site**

Item Name	Register	Place No.	Address	Property Description	Legal Status
Newcastle Bight Coastal Area	RNE	19510	Nelson Bay Road, Fern Bay, NSW	Coastal embankment stretching from Birubi Point to the Hunter River Estuary	Indicative

#### 2.1.2 NSW Heritage Act 1977

The *NSW Heritage Act 1977* is a statutory tool designed to conserve historic and environmental heritage in NSW. It is used to regulate development impacts on the State's historical heritage assets. The Act defines a heritage item as 'a place, building, work, relic, moveable object or precinct'.

To assist with the management of the State's heritage assets, the Act distinguishes between items of Local and State heritage significance:

*'Local heritage significance', in relation to a place, building, work, relic, moveable object or precinct means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.*

*‘State heritage significance’, in relation to a place, building, work, relic, moveable object or precinct means significance to the State in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.*

Archaeological features and deposits are afforded statutory protection by the relics provisions of the Act (as amended in 1999). S.139 [1] states that:

*A person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.*

**Table 2: State heritage listed items near the Subject site**

Item Name	SHR #	Gazettal date.	Address	Property Description	Significance
Birubi Point Aboriginal Place	5062849	20.04.2007	Anna Bay, NSW	Tomaree National Park	State (NPW Act)

### 2.1.3 NSW Environmental Planning & Assessment Act 1979

The *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for cultural heritage values to be formally assessed in the land use planning and development consent process and requires that environmental impacts are considered prior to land development; this includes impacts on heritage items. The Act also requires that local governments prepare planning instruments (such as Local Environmental Plans) in accordance with the principles of the legislation to provide guidance on the level of environmental assessment required.

### 2.1.4 State Environmental Planning Policies

The EP&A Act makes provision for the preparation of State Environmental Planning Policies (SEPP’s) that may, in certain circumstances, over-ride the provisions of a LEP. The State and Regional Development SEPP 2011 is relevant to the current Project.

#### 2.1.4.1 State Environmental Planning Policy (State and Regional Development) 2011

The State Environmental Planning Policy (State and Regional Development) 2011 replaced the former Part 3A major projects requirements of the EP&A Act. This SEPP identifies development that would be considered State significant development, State significant infrastructure and critical State significant infrastructure and has created two approval pathways:

- State Significant Development, e.g. mining, petroleum (oil, and gas), intensive livestock agriculture, chemical, manufacturing and other industries; and
- State Significant Infrastructure, e.g. port facilities and wharf or boat facilities, road and rail infrastructure, water storage or water treatment facilities.

For SSI and SSD declared projects, an Environmental Impact Statement (EIS) is required.

### 2.1.5 Port Stephens Local Environmental Plan 2013

Each Local Government Area (LGA) is required to create and maintain a Local Environmental Plan (LEP) that identifies and conserves Aboriginal and historical heritage items. The Port Stephens LEP came into effect in 2014.

The heritage provisions of the Port Stephens LEP are set out under Clause 5.10. The LEP recognises individual buildings, sites, places, archaeological sites and landscapes of both State and local significance as specific heritage items within Schedule 5. The LEP also lists heritage conservation areas which cover one or many built or landscape items that are listed in their own right. These are also listed in Schedule 5 of the LEP.

According to this Clause, the consent authority may require a heritage impact assessment be carried out if the proposed development is within the vicinity of land where a heritage item is situated (Clause 5.10 Subclause 5).

Before granting consent, Port Stephens Council must consider the effect of the proposed development on the heritage significance of the item or area concerned. Council may require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.

Under the Port Stephens LEP 2013 there are no listed heritage items within the subject site.

**Table 3: Heritage listed items near the subject site**

Item Name	Item No.	Address	Property Description	Significance
Birubi Point Cemetery	I2	Beyond rear boundary of 31A & 33A, 31B Ocean Avenue, Anna Bay	Tomaree National Park - DP 753204; Lot 7035, DP 1057295	Local
Stockton Beach Dune System	I34	4480 Nelson Bay Road, Anna Bay	Between Stockton and Anna Bay	Local

### 2.1.6 Port Stephens Development Control Plan 2014

The Port Stephens Development Control Plan (DCP) outlines detailed local provisions for all land within the Port Stephens LGA. These guidelines are in addition to the provisions of the Port Stephens LEP. Section B8 of the DCP states requirements that apply to all development within heritage items and heritage conservation areas and also specific, unique requirements for development within each particular area. The DCP contains controls for any developments that may impact on a heritage item.

There are no specific heritage controls within the Port Stephens DCP 2014 that apply to the project.



Figure 3: Heritage Items within proximity to the subject site (Source: Niche and LPI)



Heritage Items in relation to the Subject site

Anna Bay Sand Quarry Aboriginal Heritage Assessment

FIGURE 3

## 3. History

### 3.1 Preamble

The following subsections present a brief summary of historical development of the subject site and Anna Bay more broadly.

### 3.2 Anna Bay and surrounds



The Stockton Bight was first noted by Captain James Cook in 1770 and later mapped by Lieutenant John Shortland in 1797. Settlement Anna Bay is located at the north-eastern end of Stockton Beach in the Hunter Region of New South Wales. It is located on the southern side of Port Stephens which is located to the south of the one million acre land grant to the Australian Agricultural Company (A A Co) (see Figure 4). William Cromarty, who was involved with the A A Co settled outside of the Company's holding at Soldier's Point which is north of Anna Bay (ABPS 2014).

The first European settlement in the area involved the establishment of dairy farms, which were constrained to the low-lying areas of Anna Bay in the 1830s (HLA 1995). An unsealed government road, which became the current Nelson Bay Road was established that linked Stockton with Nelson's Bay in the mid nineteenth century, but regular use of the road by cars did not occur until the 1920s (OEH 2015:26).

During World War II, the road between Stockton and Anna Bay was improved and greater access encouraged more activity to occur in the area, such as holiday accommodation and residential and tourism development (OEH 2015: 26). Sand mining for heavy minerals commenced in 1968 at Anna Bay (located to the east of the subject site; see Figure 4), with other mines opening in Salamander, Bobs Farm, Tanilba, Oyster Cove, Williamtown and Medowie from the 1950s on (Bartlett 1980).

**Figure 4: 1985 aerial photo showing the sand quarry and Birubi Point Cemetery (Source LPI)**





Figure 5: Plan of the Australian Agricultural Company's grant at Port Stephens 1828 [cartographic material] / engraved by J. Cross 18 Holborn London Online images available via the State Library of NSW at: <http://acms.sl.nsw.gov.au/album/albumView.aspx?itemID=9>

### 3.2.1 Birubi Aboriginal Place

Birubi Point, which is located 1.4 km the east of the subject site is a registered Aboriginal Place due to its continued association with the Worimi people. It was registered as an Aboriginal Place 5062849 (file

number 07/18962 & DOC 07/50249 & DOC1) under the National Parks and Wildlife Act in 2007. It is a traditional Aboriginal ceremonial and burial site which contains extensive archaeological material which is important to the teaching of the current and future generations about the local Aboriginal culture. This site is connected with the Worimi Conservation Lands, which are a joint management of a number of National parks and conservation areas that. For a more detailed assessment of the Aboriginal Place, please refer to the Aboriginal preliminary assessment prepared by Niche (2018).

### 3.2.2 Birubi Point Cemetery

Birubi Point is located approximately 2.3 km from the subject site. Birubi Point Cemetery was in use between 1876 and 1996 and contains the graves of early settlers to the area as well as shipwrecked persons, some of who were unidentified. The cemetery is located adjacent to the original lot of land settled by the Blanch family in the 1950s. The point on which the cemetery is located was known as Cemetery Point, until the name was officially changed in 1976 and it is now located within the lands of the Birubi Point Aboriginal Place. The first internment in 1876 was that of Lucy Blanch who was an Anna Bay pioneer. The cemetery contains a layout plan on a plaque and includes a list of all the known burials within the cemetery, numbering 88 internments.

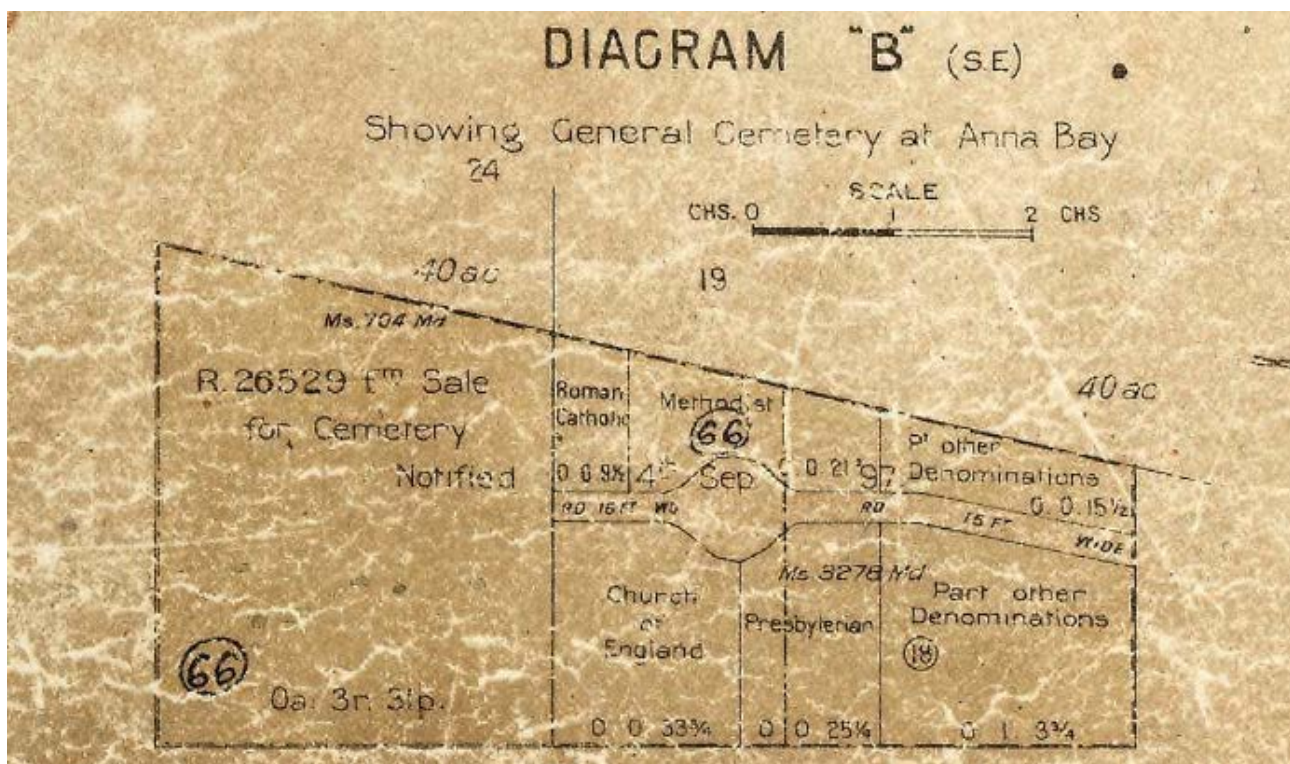


Figure 6: Insert from the 1967 Tomaree Parish map showing the layout of the Birubi Cemetery.

### 3.3 Stockton Beach Dune System

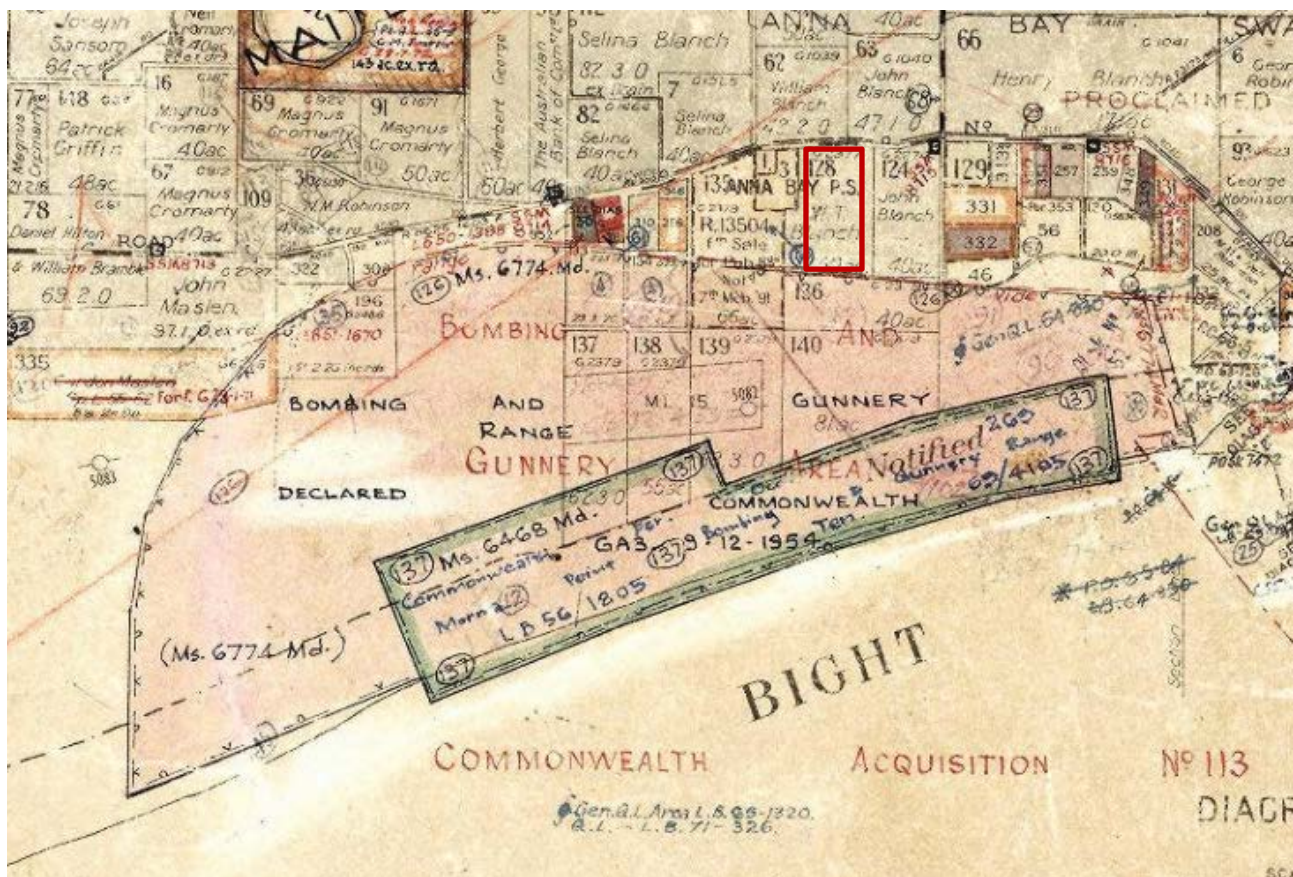
Stockton Beach dune system is the largest moving coastal land mass in the southern hemisphere, and stretches from Stockton to Anna Bay covering a distance of approximately 25 kilometres in length. The dunes are moving inland at a rate of about one metre per year, following their destabilisation in the nineteenth century by severe storms and cattle grazing. According to the Register of the National Estate, the entire bight (stretching from the Hunter River Estuary to Birubi Point in the north) is of significance for its unique natural ecosystem (RNE Place ID: 19510).

As a result of the shifting sand sheet, Aboriginal midden sites, burials and education sites important to the Worimi peoples, as well as World War II fortifications, are periodically covered and revealed by the moving



sands. The defence lines that were constructed on Stockton Beach during World War II were part of the Northern Defence Line, which was a part of the nationwide response to the Japanese attacks on Darwin and submarines entering Sydney and Newcastle harbours (OEH 2015:27). The defensive tank traps were set up along the entire line of the beach, and infantry-manned heavy and light artillery stations were established at the southern end of the beach at Fern Bay. Tank traps which were removed from their emplacements now form the boundaries of an overflow carpark just below Birubi Point at the northern end of the beach. The northern end of the beach, located south of Birubi Point was used as a bombing and military training location during World War II (OEH 2015:27). The weapons range, which was established during the war with an area approximately totalling 400 hectares, including an area directly to the south of the subject site. The area continued to be used as a RAAF weapons range until at about 1965 (see Figure 5). Unexploded ordinance is still recovered from the sand dunes and are subject to protocols from the NSW Police and Department of Defence (OEH 2015:27).

Located within the central section of the beach, behind the foredune, are a group of eleven corrugated iron structures with gable or skillion roofs. They have been named “Tin City” by the locals. The original huts date to the 1940s and 50s and were constructed for use by recreational fishermen in the area. The majority of the huts that are currently standing were constructed in the 1970s and 1980s, with the most recent hut constructed in 1992. None of the original huts from the 1940s and 1950s are still standing, but those that remain continue to be used by fishermen (OEH 2015:28). The remains of destroyed huts on the southern and central areas of the beach remain under the shifting sand dune, subject to exposure by local sand drift.



**Figure 7: 1967 Tomaree parish map outlining "bombing and gunnery range" abutting onto the subject site (indicative location shown in red). (Source: LPI)**

### 3.4 The Subject Site and surrounding area

The subject site is located within a land grant belonging to a W. T. Blanch, who is likely John and Lucy Blanch's son William, born in 1863. The Branch family owned much of the land within the Anna Bay area in the earliest days of European settlement, from at least the 1850s (ABPS 2014:5). It is unknown, from documentary evidence what activities took place within the subject site, but it has remained predominately uncleared of native vegetation until the present day.

The subject site is also located adjacent to the second (and third) Anna Bay Public School buildings (known until 1896 as Hannah Bay Public School). The first school was gazetted in September 1879 and the proposed structure was a slab and bark hut capable of holding twenty pupils. The school was located within William Blanch's land fronting the government road on the northern side of the current Nelson Bay Road (Joe Robinson 1907 quoted in ABPS 2014:23). Construction of the first school was completed in November 1879. When this primitive structure was outgrown, a new plot of land was purchased south of the government road a new school was constructed in 1884. The school was a rounded roof structure made of corrugated iron. It had a verandah and an internal stepped floor with long bench desks which allowed the pupils and teachers to see each other more clearly. This school was demolished and replaced by a new structure in 1910 within the same plot. The newer building consisted of a 21 feet squared hipped roof building with a verandah with a flat floor. The remains of the second school were used to construct a lean-to within the school grounds (ABPS 2014). The school building is visually separated from the subject site by a later subdivision.

#### 3.4.3 Modern Development

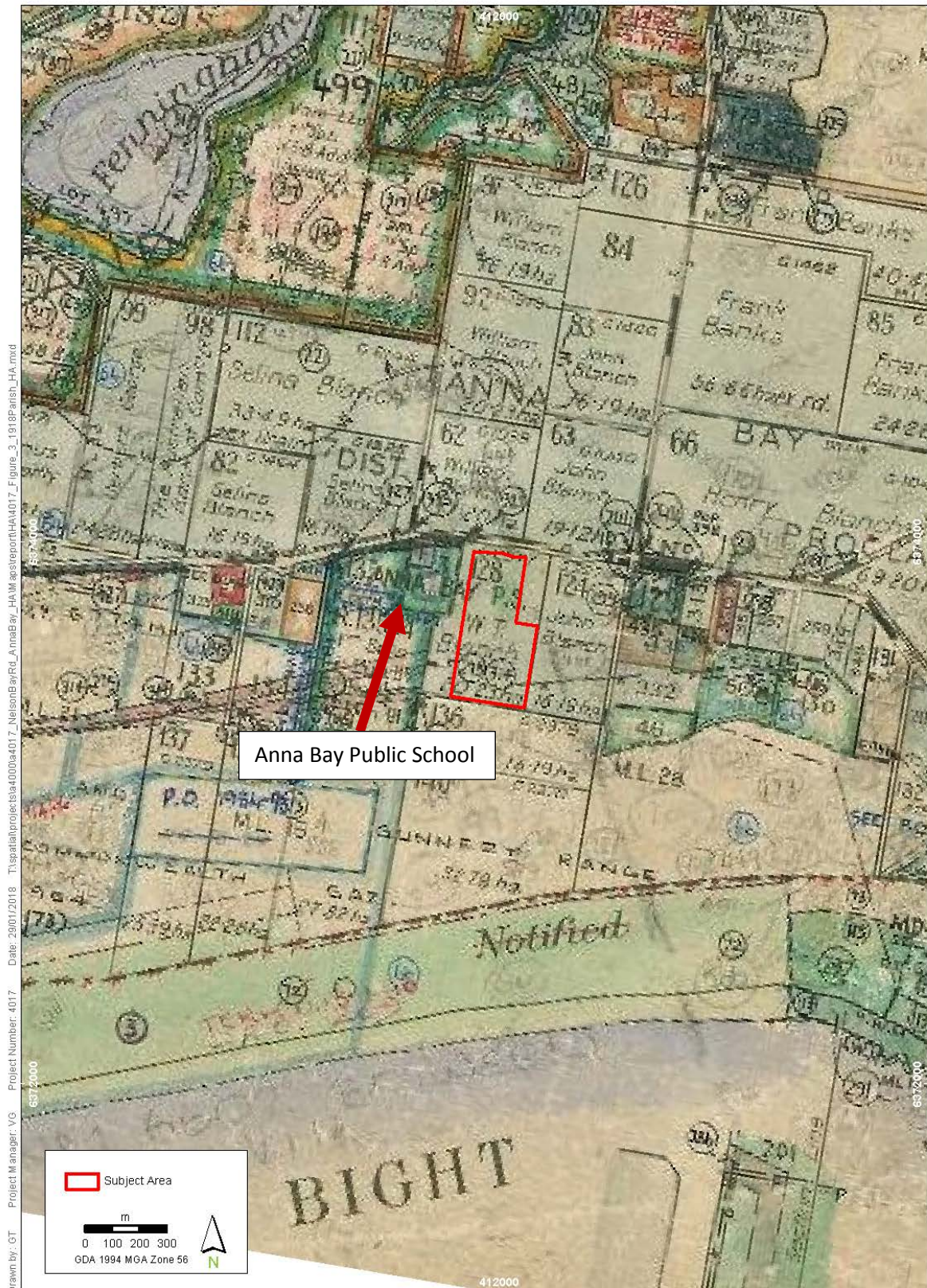
There are two garage buildings and a gabled roof building present fronting the road on 4226 Nelson Bay Road, in the earliest 1963 aerial available (see Figure 7). Directly to the west of the building group, within the subject site is a cleared and cultivated field. There are long, probably farm related structures running east-west across the property, approximately to the house and barns fronting the road. To the west, outside of the subject site, are a series of residential buildings (4206-4210 Nelson Bay Road) constructed between the subject site and the potential school building identified in on 4202 Nelson Bay Road (see Figure 7). To the east of the subject site is a carpark, market building and the 'Baylife Church'. An unformed, cleared track through the native vegetation, most likely relating to the transmission line runs near the southern boundary of the subject site. It was most likely developed following the cessation of the RAAF activities to the south of the subject site.

In 1985, the east-west farm building located to the south of the main domestic building within the subject site has been demolished and the majority of the cleared farm paddock to the west of the domestic building has regrown vegetation. It should also be noted that the sand has encroached towards the transmission line from the south, where it was not visible before. The transmission line has also been cleared and a gravel road surface added.

In 2015 Nelson Bay Road was widened and straightened, which meant that the residential dwelling present in the 1963 aerial was demolished. The remaining three garage buildings are located fronting the road now. The access track, which is proposed to be widened prior to mining commencing starting from between the garage buildings.



Figure 8: 1918 Tomaree Parish Map with the subject site outlined in red (Source LPI and Niche)



1918 Parish Map

Anna Bay Sand Quarry Historical Heritage Assessment

FIGURE 7





Figure 9: Aerial photo from 1963 showing the possible location of the second school building, and the cluster of structures within the subject site (approximately outlined in blue)





Figure 10: 1985 aerial with the approximate subject site outlined in blue

## 4. Site description and setting

### 4.1 Preamble

An inspection of the subject site was conducted on 23 January 2018 by Viki Gordon (Senior Heritage Consultant, Niche). The inspection involved field survey of the impact footprint for the proposed development in its entirety. Photographs were taken, and any observations noted.

The subject site is contained within Lot 591 in Deposited Plan 1191380 (known as 4226 Nelson Bay Rd, Anna Bay). The subject site is area affected by the impact footprint outlined in Section 1.3 and detailed in Figure 2). The lot is largely undeveloped and located on a vegetated sand dune. The subject site is constrained by its location within the pre-cleared and modified access track and transmission line easement. There is very little vegetation within the greater proportion of the subject site, along the access track. Vegetation clearance and the subsequent construction of a residence, garage and in-ground pool had previously taken place in the area adjoining the Nelson Bay Rd street frontage and limited to the north east corner 150 m (see Figure 1). Adjacent to the proposed impact footprint, is uncleared vegetation, it is also present within the footprint for the proposed caretaker's residence and work shed.



**Figure 11: Original development and street frontage, prior to road widening (Source sixmaps.nsw.gov.au)**

In 2015, a proportion of the street frontage was resumed by Roads and Maritime for the purposes of widening Nelson Bay Rd. The road was widened from approximately 9m wide to 21m, and it was straightened to resume an additional 10m of the street frontage of the subject site, creating an impact footing of approximately 29m. As part of this resumption, the existing residence and in ground pool were demolished and infilled. Figure 10 shows the existing street frontage and remaining garage structure.





**Figure 12: Current street frontage showing the modification to the street and demolition of the original house in plan view (Source Tattersall Lander)**

## 4.2 Nearby Heritage Items

The only heritage item within close proximity to the subject site is the Stockton Bight Dune System. The heritage curtilage for this item terminates approximately 3 kilometres to the west of the subject site. The sand dune system abuts the subject site, but this area is not included in the gazetted heritage curtilage. Due to the nature of the shifting sands, as noted in Section 3.3 sand moves from within the protected area of the dunes, northward, so the sand moving into the subject site may have come from within the Stockton Bight Dune System curtilage.

## 4.3 Archaeological Potential

As noted on the 1963 aerial of the property, there is a cluster of buildings located close to the original street frontage on Nelson Bay Road. They are visible on the 1963 aerial (see Figure 7), so were constructed prior to this date. There is a hipped roof residential building located closest the original road alignment. This building was demolished between September 2013 and January 2014 to allow for the widening and straightening of Nelson Bay Road. There are also three garage buildings with corrugated roofs south of the dwelling that are still standing.

Also visible in the 1965 aerial is an elongated rectangle building with a flat roof at the southern end of the cleared paddock to the south and south west of the dwelling and garage buildings. This rectangular building has been demolished by 1985 and has been replaced by a small rectangular building. This building has also been demolished at around the same time as the dwelling in the road corridor. These corrugated roofed buildings likely relate to the farming practices visible in the 1963 aerial.

No other buildings are visible within the subject site, the only other works located within the area are clearing for the unformed vehicle track (which is established and cleared after 1985) and the electricity easement which is located in the southern third of the subject site. The easement route is present in the 1963 aerial, but there is no noticeable electricity infrastructure within the cleared easement, it appears to just be an unformed track.

The former rectangular buildings to the south- and south-west of the garage buildings, which were demolished in 2013/2014, may have left sub-surface remains following its demolition. However, artefactual

or subsurface structural material associated with twentieth century farming practices would not meet the threshold for local heritage significance.

As such, the archaeological potential for significant relics at the subject site is nil.

## 5. Assessment of Significance

### 5.1 Significance framework

The *NSW Heritage Manual* guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2001) provides the framework for the following significance assessments and Statements of Significance. These guidelines incorporate the seven aspects of cultural heritage value identified in the *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter) into a framework currently accepted by the NSW Heritage Council. Following the results of the background reviews, historical research and site inspections, significance assessments for identified heritage items are presented in the subsections below.

### 5.2 Significance assessment for the Stockton Beach Dune System

A heritage significance assessment of the Stockton Beach Dune System is provided in Table 4 below.

**Table 4. Assessment of heritage significance for the Stockton Beach Dune System**

Criterion	Significance
<i>(a) An item is important in the course, or pattern, or NSW's cultural or natural history (or the cultural or natural history of the local area)</i>	<p>The dune system is important to both the cultural and natural history of the local area as it is an indicator of changed in weather over time since the Quaternary period and as an important place for the Worimi people.</p> <p><b>The heritage item has local significance under this criterion.</b></p>
<i>(b) An item has strong or special associations with the life or works of a person, or group of persons, of importance in the cultural or natural history of NSW (or the cultural and natural history of the local area)</i>	<p>The sand dune contains shell middens, relics relating to shipwrecks, tin huts, and World War II fortifications including tank traps, barbed wire, observation posts and an aeroplane crash. The Tin City has specific association with recreational fishing on the beach, as they are continually used by current fishermen.</p> <p><b>The heritage item has local significance under this criterion.</b></p>
<i>(c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievements in NSW (or the local area)</i>	<p>The sand dunes have aesthetic characteristics due to their large scale showcase of unique natural formations and ecological communities.</p> <p><b>The heritage item has local significance under this criterion.</b></p>
<i>(d) An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.</i>	<p>It is socially significant to the Worimi people, as it is part of the Worimi Conservation Lands, and contains recorded shell middens</p> <p><b>The heritage item has local significance under this criterion.</b></p>
<i>(e) An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)</i>	<p>The sand dunes make an important contribution to the area's natural history as they are a representative example of dual barrier sand dunes which were formed in relation to sea level changes during the glaciation of the late Quaternary. The outer barrier sand dune system is an area of marine transgression and progradation which occurred following the end of the sea level rising (6500 years to 6000 before the present).</p> <p><b>The heritage item has local significance under this criterion.</b></p>

Criterion	Significance
<i>(f) An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area); and</i>	<p>The dune system is said to be the largest mobile sand mass in the southern hemisphere. It is a well preserved example of a dual barrier system. It have been subject to overuse by four wheel drive vehicles.</p> <p><b>The heritage item has local significance under this criterion.</b></p>
<i>(g) An item is important in demonstrating the principal characteristics of a class of NSW's: Cultural or natural places; or Cultural or natural environments; (or a class of the local area's) Cultural or natural places; or Cultural or natural environments.</i>	<p>The Stockton Beach sand dunes are representative of a specific kind of barrier dune system that is unique to Australia in this area.</p> <p><b>The heritage item has local significance under this criterion.</b></p>

### 5.3 Statement of Significance

The following statement of significance is adapted from the heritage inventory sheet completed for the Port Stephens Local Environmental Plan (Item No: I34) and the Register of the National Estate listing (Place ID: 19510):

The Stockton Sand Dune System is of local significance for both its natural and cultural criteria. It is the largest mobile dune system in Australia which provides evidence for environmental change over the last 150,000 with particular emphasis on changes caused by climate change. Various native flora and fauna are native to the area, including three species of rare orchid.

The cultural significance of the area extends from its use by the Worimi people to travel and their connection to the ocean, nearby estuarine and forest habitats, and stone tool sources. Hundreds of recorded Aboriginal sites exist within the sand dunes, the majority of these sites are shell middens and there are recorded burials and repatriated burials within the sand dune system.

Located within the sand dunes are remnants of World War II fortifications including tank traps and a rifle range, which are exposed and covered by the moving sands. A 'Tin City' is located within the centre section of the beach which shows continued association with recreational fishermen since the 1940s and 1950s.



## 6. Heritage Impact Assessment for Stockton Beach Dune System

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### 6.1 Introduction

The following subsections assess potential impacts of the proposed works on the heritage significance of Stockton Beach Dune System heritage item (SHI #2280081; LEP listing I34).

The *Statements of Heritage Impact* guidelines (NSW Heritage Office and Department of Urban Affairs & Planning 1996, revised 2002) pose a range of questions for consideration when assessing heritage impacts. Of relevance to this assessment are questions concerning new landscape works and features, which are addressed below.

### 6.2 Proposed Activity

The Proponent intends to establish a sand quarry to extract a maximum of 50,000 cubic metres of sand in any year over a 30 year period. The main impacts of the development proposal are depicted in Figure 2 and will be:

- The extraction of sand to ground level
- Removal of vegetation for the purposes of the caretaker's residence/site/office/machinery shed; intersection upgrade and site access improvements (haul road)
- Construction of a caretaker's residence/site office and machinery shed which will be a slab construction with minimal earth impact
- The existing access road will be widened to 6m (pending Council and other authority comments) and consist of basic gravel construction (unsealed) with adequate drainage; other than for minor drainage purposes. There is no proposal to excavate into the existing road
- Following the cessation of quarry activity, the back slopes of the dunes will be re-vegetated to attempt to stabilise the sand and replace the vegetation removed during the mining process.

### 6.3 Potential impacts to heritage items

#### 6.3.1 Direct (physical) heritage impacts

The proposed activity will involve the extraction of sand up until the southern property boundary, this will cut into the existing sand dune profile, but it will not cut into the heritage listed portion of Stockton Beach Dune System. The mine will remove sand, as it moves from the beach into the electricity easement. Rehabilitation procedures, including revegetation will be undertaken in the quarry area to stabilise the sand. The sand extracted by the mine could have originally come from the listed portion of the dune system, but as it has moved from outside the curtilage and the sand will be cleared from the existing transmission line easement.

The activity will not cause any impact upon the Stockton Beach Dune System, as the subject site is located outside of the heritage curtilage of the item.

The original Anna Bay School building, which is noted in Section 3.7 is located to the west, outside the boundary of the subject site. The school site is not listed on any heritage register and it is unlikely that any buildings associated with it are located within the subject site. No other heritage items are located within distance where they would be physically impacted, including the Birubi Point Cemetery (LEP item I2), or the Stockton Beach Dune System (LEP item I34). The proposed sand mine is also located outside of the curtilage of the Birubi Point Aboriginal Place.

### 6.3.2 Indirect (visual) heritage impact

There will be no visual impact from the proposed activity onto Stockton Beach Dune System, as the sand is being removed from the back of the current barrier dune with battering to be constructed following the geotechnical assessment. The caretaker's house and associated buildings will be sheltered from view from the beach by the remainder of the sand dune that will not be quarried.

Due to the distances of the proposed activity from the other heritage items in the area (including Birubi Point Cemetery, and Birubi Point Aboriginal Place) there are no anticipated heritage impacts to these items. Birubi Point Aboriginal Place and Birubi Point Cemetery are located 3 km away from the subject site and would only be able to see the rear of the sand dune from which the quarry will be extracting from.

Following the completion of quarry activities, the back slope of the sand dune will be re-vegetated with local vegetation to stabilise further erosion and dune movement. This will not be visible from the curtilage of the Stockton Dune System, Birubi Point Aboriginal Place, or Buribi Point Cemetery as it will be at the back of the dune.

As the proposed works would not introduce any new visual elements into the landscape, the visual heritage values of nearby heritage items would not be impacted. The proposed works would therefore result in negligible impacts to these heritage items.

### 6.3.3 Potential archaeological impacts

There has been minimal development within the subject site and the property has been used primarily for small semi-rural farming. The original residential dwelling identified in Section 4.1 has been demolished and the associated garage and outbuildings remain facing Nelson Bay Road. The former Anna Bay Public School is located on a separate lot to the east of the subject site.

There are no identified areas of heritage significant archaeological potential at the subject site, and therefore ground disturbance in this area would not result in any impacts to archaeological relics.

**Table 5: Summary of potential impacts to the heritage items from proposed e sand quarry works**

Item	Direct	Indirect	Archaeological
Extraction of sand to ground level	Neutral	Negligible	Neutral
Vegetation removal	Neutral	Negligible	Neutral
Construction of caretaker's cottage/site office and machinery shed	Neutral	Negligible	Neutral
Widening of existing access track	Neutral	Negligible	Neutral

### 6.3.4 Statement of Heritage Impact

A summary Statement of Heritage Impact is provided in Table 3 below, as per the 'Statements of Heritage Impact' guidelines (NSW Heritage Office and Department of Urban Affairs & Planning 1996, revised 2002).

**Table 6. Statement of heritage impact.**

<b>Aspects of the proposal that respect or enhance the heritage significance of the heritage conservation area</b>	The proposed activity would not result in any direct impacts to the heritage significance of Stockton Beach Dune System nor impact any likely historical archaeological resources.
<b>Aspects of the proposal that could detrimentally impact on heritage significance</b>	<p>The subject site is located s outside the gazetted curtilage for Stockton Beach Dune System. The sand will be extracted from the moving transgressive sand sheet, and not extracted from the body of the sand dune. These works would not be noticeably prominent in the landscape, and would not introduce significant intrusive fabric or overshadow any nearby heritage items.</p> <p>As such there will be no detrimental direct or indirect impacts from the proposed activity because it is outside the curtilage for the dune system.</p>
<b>Have sympathetic solutions been considered and discounted?</b>	As no adverse heritage impacts have been identified, no other sympathetic solutions have been considered necessary.

## 7. Conclusions and Recommendations

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### 7.1 Conclusions

- There are no listed heritage items within, or directly adjacent to, the Subject Site.
- The subject site has been employed as a small farm-holding since the mid-nineteenth century, although no heritage significant built fabric has been identified at the site;
- No areas of archaeological potential for the recovery of heritage significant relics have been identified at the subject site.
- The proposed works would therefore not impact on any heritage significant items or archaeological relics. There are no further non-Aboriginal (historic) heritage constraints for the proposed works.

### 7.2 Recommendations

Based on the results of background heritage register searches, a visual assessment of the subject site, and an impact assessment prepared in accordance with the Statements of Heritage Impact guidelines published by the NSW Heritage Office and Department of Urban Affairs & Planning (1996, revised 2002) and best practice as outlined by the *NSW Heritage Manual* it is recommended that:

- In the event that historical archaeological relics are unexpectedly exposed during excavation, ground disturbance works should stop in the affected area and a suitably qualified historical archaeologist be engaged to assess the extent, condition and likely significance of the remains. Depending on the significance of the relics, notification of the discovery may be required in accordance with S.146 of the *Heritage Act 1977* and further approval may be required if impacts are proposed

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## Annex 1 – Proposed Works Diagram









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