

## Site photographs



1 Fencing to site frontage on Popplewell Rd



2 Looking south along Popplewell Rd



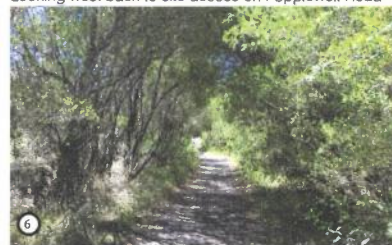
3 Looking east along the alignment of the old range



4 Looking west back to site access on Popplewell Road



5 Looking into the bush areas north of the old range



6 Informal track along southern site boundary



7 Looking north along an old firing mound



8 Looking west along the alignment of the old range



9 Looking north towards the old stop butt and dunes



10 View from the top of the dunes south across Stockton Beach towards Newcastle



## 2.3 Stockton Peninsula History

### Aboriginal Heritage

The Stockton Peninsula was originally the land of the Worimi Tribe, who knew this place as "Burrinbinton". Evidence of Aboriginal occupation is available throughout the region, extending back several tens of thousands of years. A series of Aboriginal archaeological and cultural / historical sites are situated along the peninsula, and are now known as the "Fern Bay Complex". These sites indicate traditional Aboriginal hunting, fishing, and cultural activities occurring throughout this area.

### European Heritage

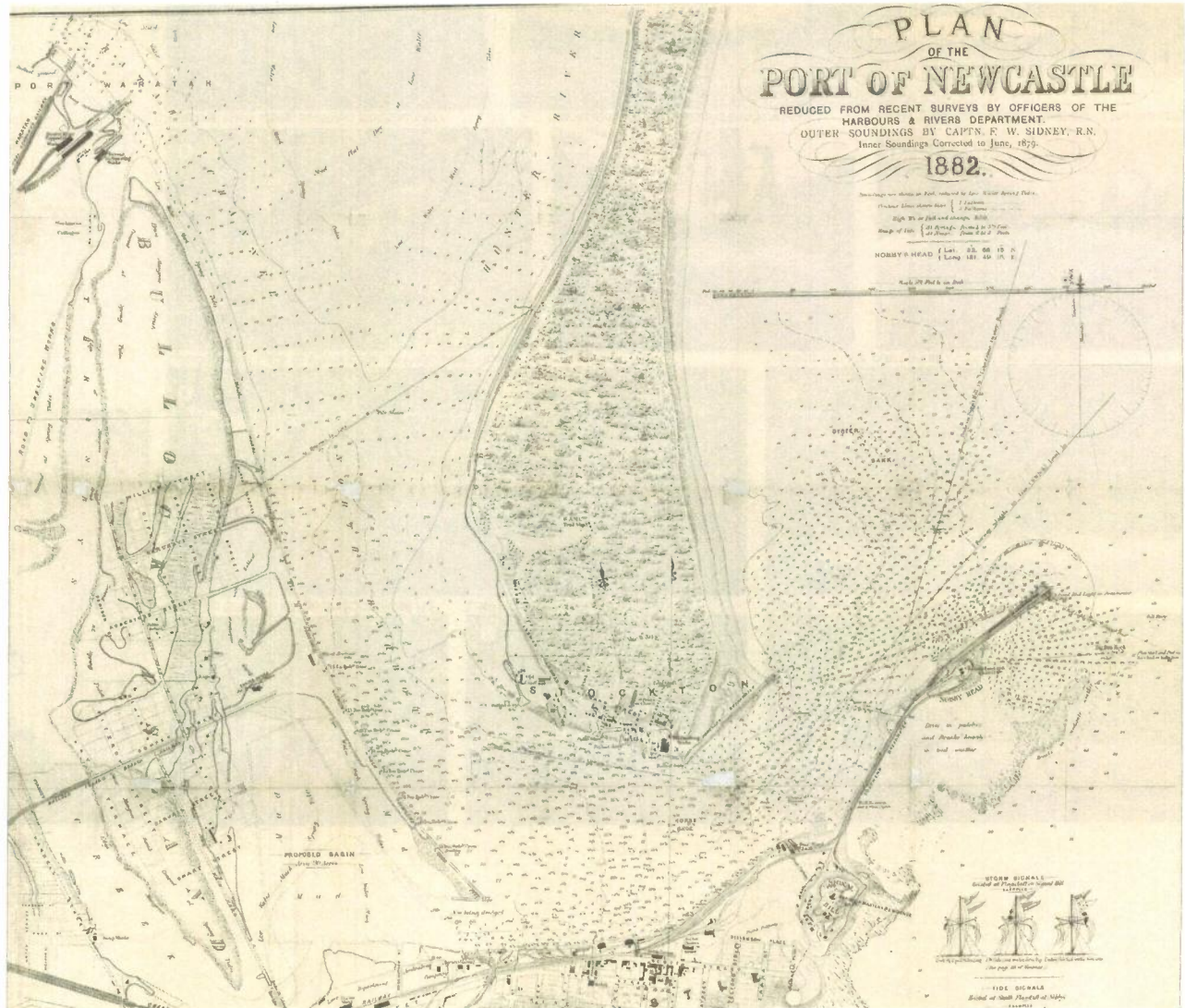
Lieutenant John Shortland stumbled upon Newcastle Harbour and the Hunter River while searching for escaped convicts in 1797. He named the Stockton Peninsula "Point Kent".

From October 1800, Stockton became known as "Pirate Point", when convicts escaping from Broken Bay in the Norfolk were wrecked on the southern point of the peninsula.

Newcastle was settled in June 1801, closed in February 1802 and later resettled in March 1804. From this time onwards, parts of the peninsula were granted to settlers, with the southernmost end of the peninsula generally becoming known as the "Private Township of Stockton". Early industries in this area included saw milling, lime burning, salt works, an iron foundry, a tweed mill, a chemical plant, a tin smelter, coal mining, and ship building.

The Stockton residential suburb emerged from subdivisions made by the State Government in 1887. Vehicular and passenger ferries provided the only means of access across the harbour (aside from a long journey inland via Hexam) until the Stockton Bridge opened in 1971.

While the Stockton Peninsula may now be considered as the northern suburbs of Newcastle, it has its own distinctive seaside character.



Plan of the Port of Newcastle, National Library of Australia  
<http://nla.gov.au/nla.obj-231510237/view>

## 2.4 Rifle Range

### Aboriginal Heritage

The Rifle Range site has eight recorded sites of Aboriginal heritage: six on the mobile dune to the east side of the range (subsequently destroyed by sand mining activities), and two extant sites of scattered stone artefacts in the central portion of the range. It is possible that there are further Aboriginal archaeological deposits, including burials, on the site.

It is recommended that the following development principles are adopted:

- Restrict development in vegetated portion to south of the site, allowing a buffer to the Stockton Hospital and Cemetery.
- Avoid development in the northern vegetated portion of the site as this area has the highest archaeological potential.
- Investigate the possibility of minimising excavation works within the site in order to reduce potential to interact with sub-surface deposits.
- Consideration of Aboriginal cultural heritage awareness through interpretive signage, sympathetic plantings, use of open space etc. to recognise/promote heritage values.
- Aboriginal party consultation will need to be undertaken with reference to cultural values (outside archaeology).

### European Heritage

The site remained undeveloped until range construction began in 1939-40, although the site was not formally acquired by the Commonwealth until 1942. The dunes and ocean were utilised as a safe background area, but nevertheless, substantial earthworks were required to develop the range's topography that exists today.

Constructed just prior to and during WWII, Fern Bay Rifle Range was a firing range used by military personnel due to the demand for shooting that could not be met by Adamstown Rifle Range. The range was constructed as a classification range of 50 targets in a concrete gallery,

firing mound at 900 yards, a telephone service, wind flags, storage facilities and a workshop.

The site has no associated heritage listings on any level. However, it does comprise two items with some heritage significance: the Anti-Aircraft battery and the remnants of the 1000 yard Rifle Range which constitutes cleared access ways from the central road at 100 yard intervals which are now overgrown.

The remnant Links Battery located to the north of the classification range was completed around 1940. The Links Battery comprised four Vickers 3.7 inch anti-aircraft guns. It consisted of four gun emplacements and a central command post in a standard layout. The battery contributed to the Newcastle Fortress coastal defence system against air bombardment and particularly to protect Fort Wallace.

A series of upgrades were undertaken from 1942 as a result of the arrival of two new types of fighter planes from Britain which were ordered to oppose the Japanese over Darwin. These planes utilised 20mm Hispano Cannons. New firing ranges were required to test these weapons and in response the Stockton range was equipped with a 20mm Accuracy Range.

After the war the Rifle Range was used for military, police, cadets, and civilian club rifle training until the range was closed in 1997. Mining of sand from the dunes took place from the 1950s until the present.

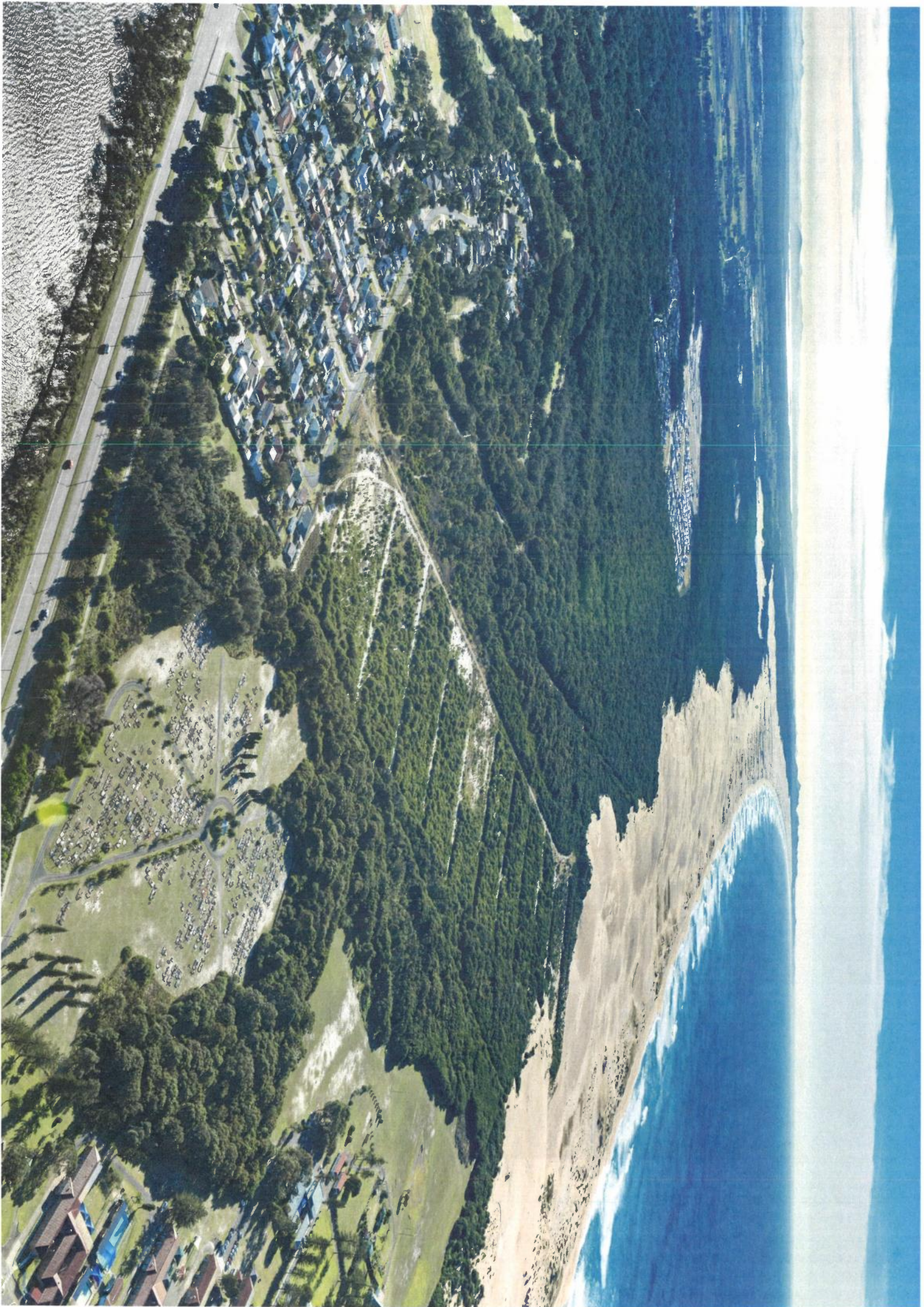
### Opportunities for Future Uses

While the Rifle Range site has significant historic associations, the historic remains on site are in poor condition. There is the potential for the retention of undisturbed bushland areas for their spiritual context (aside from their ecological value), for heritage interpretation, and potentially for the structural pattern of the range to be incorporated in the master plan.

Images of parts of the Anti-Aircraft battery. (Source: GML)









# Strategic planning framework and controls

# 3

## Strategic planning context

### 3.1 Hunter Regional Plan

Architectus on behalf of Defence Housing Australia (DHA) prepared a submission on 23 March 2016 to the NSW Draft Hunter Regional Plan (DHRP) and Draft Plan for Growing Hunter City (DPGHC) 2015.

The DHRP sets out a 20-year plan prioritising the growing and diversifying of the Hunter economy as NSW's largest regional economy, and identifies subregional landscapes being the Western Hunter, Northern Tops, North East Coast and Hunter City (including Inner Newcastle) districts.

The DPGHC supplements the Regional Plan and follows the 20-year time frame, reinforcing the City as the gateway to the region by capitalising on assets for greater growth via its identified districts, Inner Newcastle, Inner West, Maitland-New England Highway Corridor, Northern Gateways and Northern Lake Macquarie.

The Stockton Rifle Range site (Port Stephens LGA, currently zoned E2 – Environmental Conservation) also has significant redevelopment potential. In both studies, the area is shown as 'Non-Urban Area' which may have the effect of precluding a future rezoning of the site. It was recommended that both plans show the site as 'Urban Area' or 'Urban Area – For Investigation' to make way for the full assessment of the site's redevelopment potential.

The Fort Wallace site (Newcastle LGA, currently zoned SP2 - Defence) is shown as an 'Urban Area' in the DHRP, but as 'Non-Urban Area' in the DPGHC. It was submitted that the site's potential for renewal be recognised and shown as 'Urban Area' consistently in both documents.

Additionally, it was recommended that the Department of Planning and Environment consider the inclusion of both DHA sites within the Inner Newcastle District to recognise their strategic and visual relationship with the city and their potential to contribute to the goals for Hunter City.

Map showing extended 'Inner Newcastle District'



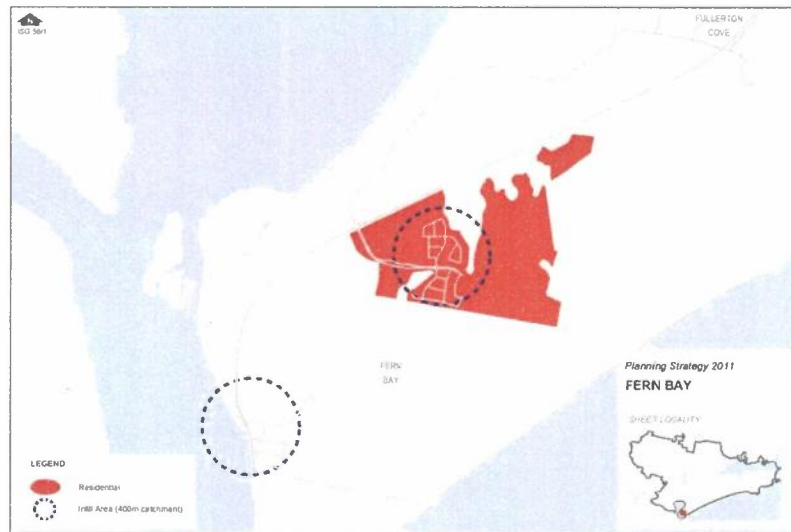


### 3.2 Port Stephens Planning Strategy (PSPS) 2011

Areas identified as Fern Bay - Fullerton Cove, to the north and west of the Rifle Range, have been identified as future growth areas within the Strategy. This area, including the subject sites, comprise the Eastern Growth Corridor identified within strategic planning for Port Stephens. The area has been recommended to increase in density over the next 15-20 years since the Strategy's release, with potential for:

42 infill residential dwellings; and

1,396 dwellings within green field residential zoned land.



PSPS 2011 - Fern Bay - Fullerton Cove - Future Growth Area. The site is in close proximity to these future growth areas.

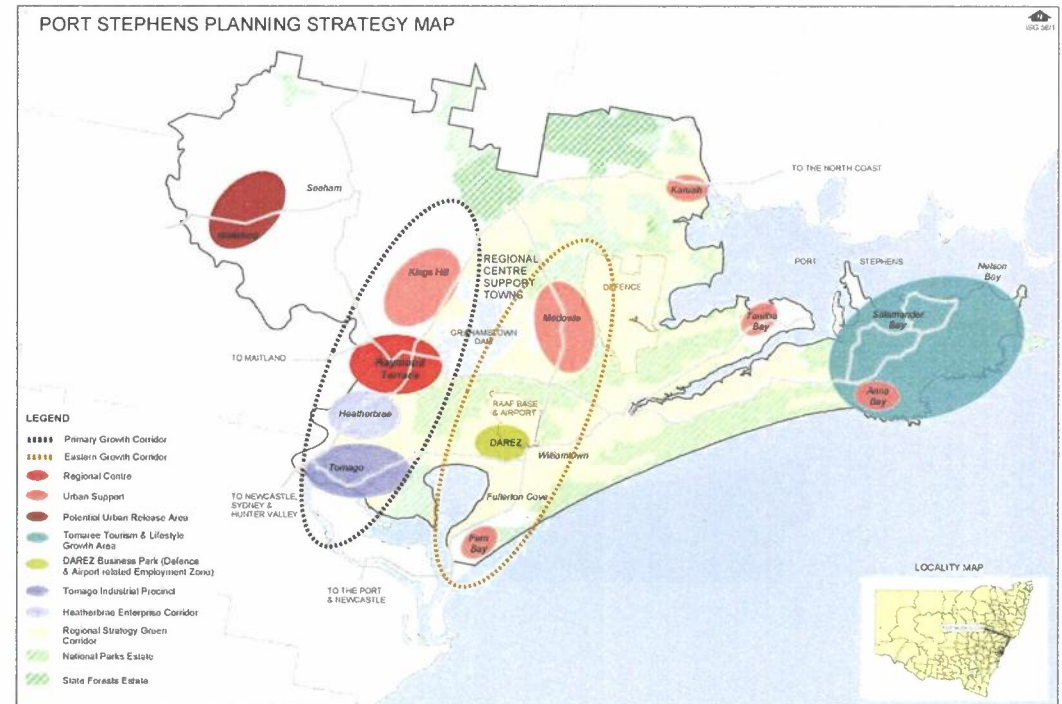
The Strategy also recommends the opportunity to maximise access to existing infrastructure through density increases.

As the suburb (of Stockton or Fern Bay) is among the LGA's small centres with no available commercial floorspace, the need for commercial rezoning has also been identified.

The Strategy predicts a need for an indicative 14,441 additional dwellings throughout the LGA, including infill and within rural areas.

### 3.3 Port Stephens Commercial and Industrial Lands Study

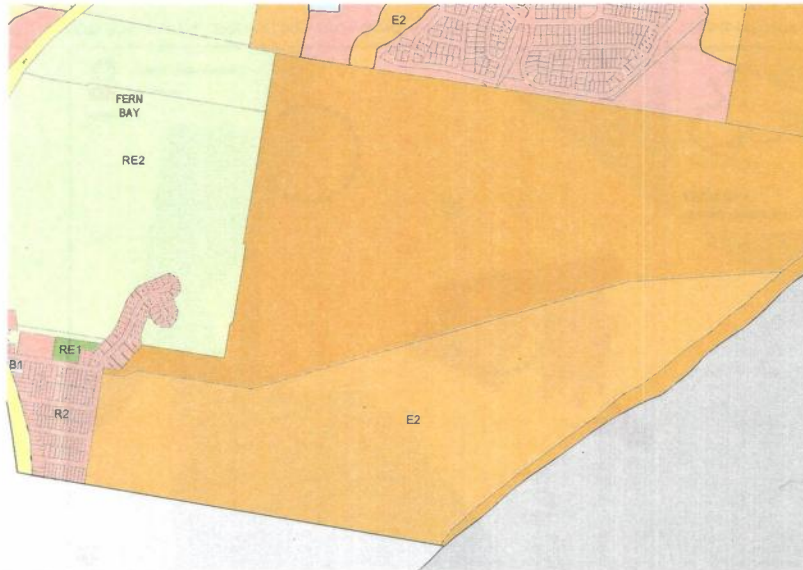
Fern Bay has been highlighted as one of the small centres within Port Stephens that will experience greater residential growth. It has been recommended within the Study for rezoning from 2A Residential to B1 Neighbourhood Centre. In consideration of the Newcastle Centre across the peninsula to the south, this is to accommodate the day-to-day needs of the local residents.



PSPS 2011 - Port Stephens Planning Strategy Map. The site is part of the Eastern Growth Corridor.

# 4

## Local planning context



Land Zoning Map, Port Stephens LEP 2013

The subject site is zoned E2 Environmental Conservation. The E2 zone permits dwelling houses and dual occupancies. The beach to the east and large lots to the north are zoned E1 National Parks and Nature Reserves.

Land to the west is zoned R2 Low Density Residential, with some areas of public and private recreation.

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Use
B5	Business Development
B7	Business Park
E1	National Parks and Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN4	Working Waterfront
R1	General Residential
R2	Low Density Residential
R3	Medium Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village

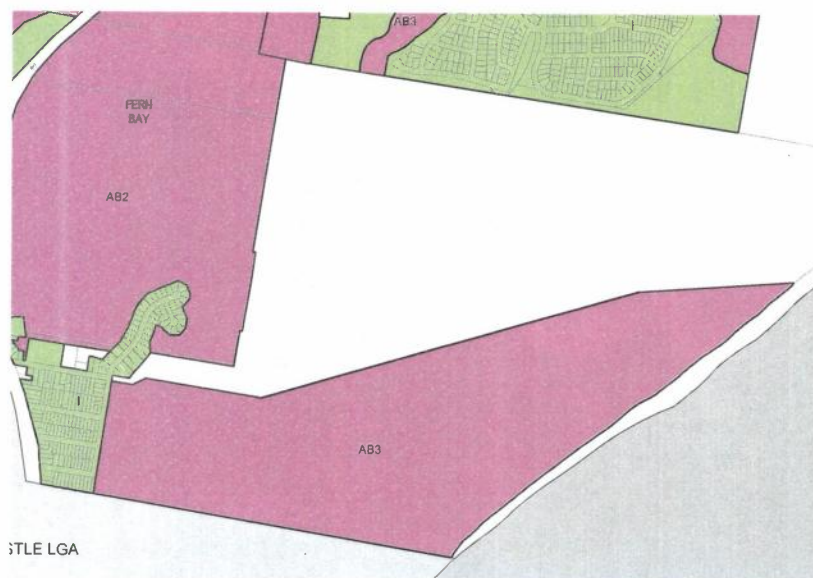


Height of Buildings Map, Port Stephens LEP 2013

The subject site has no maximum height of buildings control. The adjoining residential areas are subject to a maximum height of J 9m.

L	8
J	9
M	12
O	15
Q	19





#### STLE LGA

Minimum Lot Size Map, Port Stephens LEP 2013

The minimum lot size applicable to the subject site is AB3 40ha. The adjoining residential areas are zoned I 500sqm.

B	200
F	400
G	450
I	500
M	600
Q	700
T	900
U	1000
V	2000
W	4000
Y	1 ha
Z1	2 ha
Z2	4 ha
AB1	10 ha
AB2	20 ha
AB3	40 ha







# Site analysis



THE SITE'S WESTERN INTERFACE WITH POPPLEWELL ROAD





## 5.1 Purpose and scope

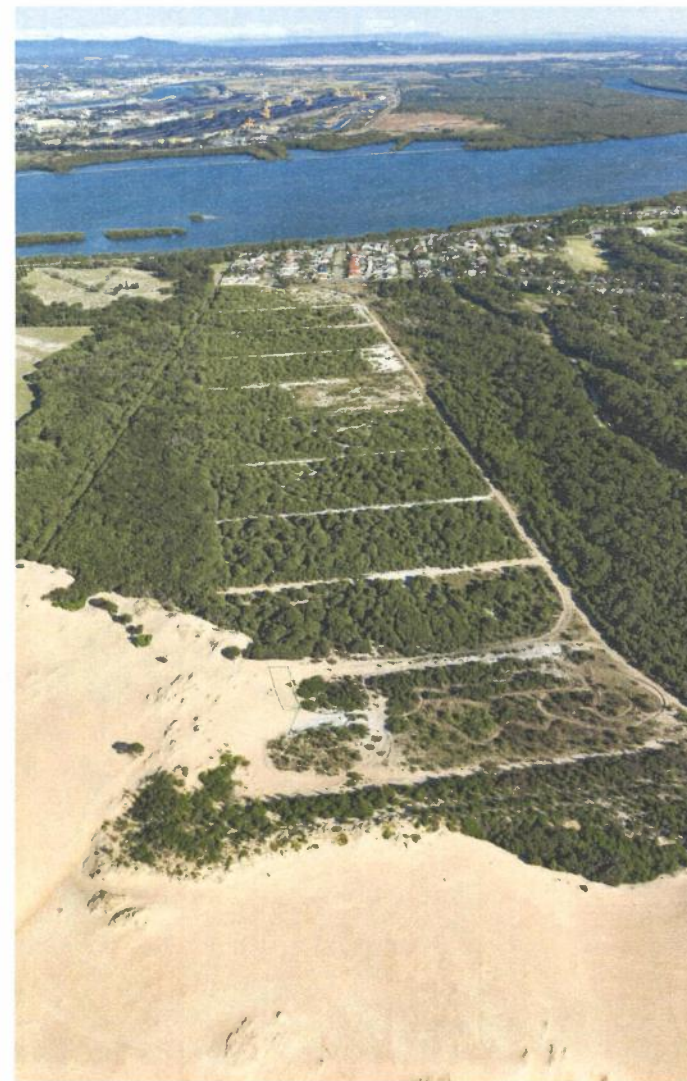
The project team has undertaken a thorough study of the physical site and its history in order to understand the site's unique and special characteristics. This examination has included site walks, document research and desktop review, site mapping, future projections relating to climate change and other studies by a range of specialist consultants.

Properly understanding the site is a crucial step in ensuring the creation of a sensitive, site-responsive and sustainable master plan. By clearly identifying the site's constraints and opportunities we are able to conserve areas of the site that are of special environmental and cultural value, and areas that could be suitable for new development, which could include public open space and amenities, streets, housing or other physical changes to the existing site.

The detailed site analysis includes:

- Topography
- Ecology
- Landscape
- Coastal erosion
- Heritage
- Access and circulation
- Views
- Built form

The detail of these analysis are presented in separate consultant reports. This section summarises technical inputs where relevant to the recommended master plan for the site.



Aerial view of the site



## SITE INTERFACE WITH POPPLEWELL ROAD





## LOOKING EAST ALONG THE ALIGNMENT OF THE OLD RANGE

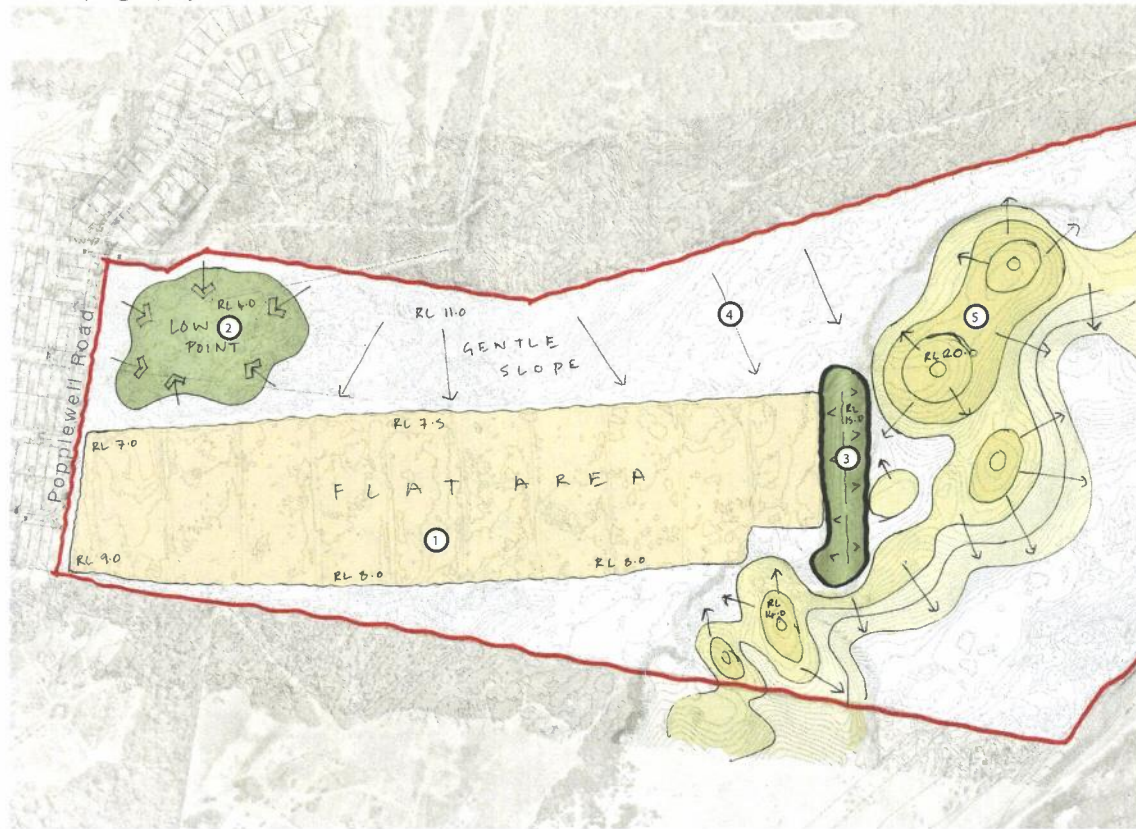
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## 5.2 Topography

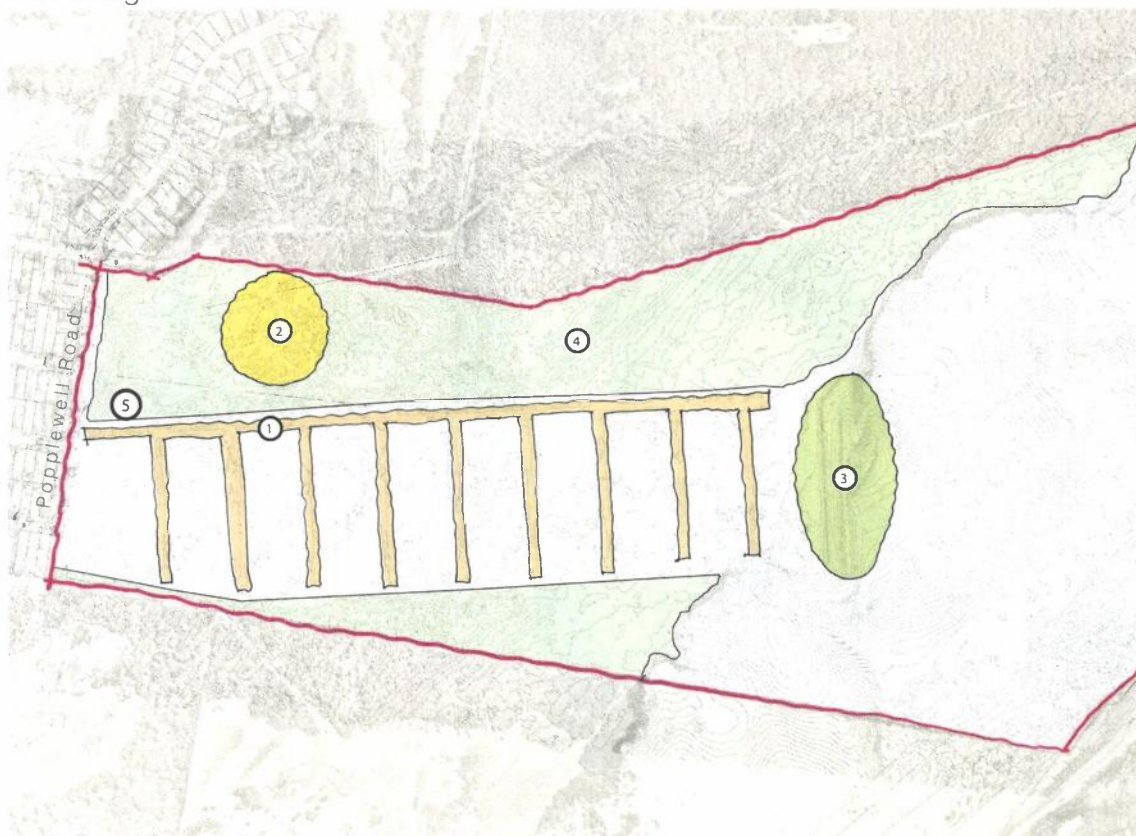


- ① Large, partially open flat area formed by remnant rifle range provides opportunity to accommodate residential development.
- ② Vegetated low point in north-west corner of the site - potential opportunity to accommodate drainage feature.
- ③ Large mound/'Stop Butt' to east of the site provides a visual and physical barrier to the dunes and beach.
- ④ Northern vegetated portion of the site slopes gently toward the flat rifle range ground.
- ⑤ Existing dunes to Stockton Beach rise approximately 12m from the Rifle Range. These are transient landforms that may require some vegetated stabilisation adjacent to any new development.





### 5.3 Heritage



- ① Consider the set-out of the old firing mounds as a heritage item for interpretation.
- ② Potential restoration, access and interpretation of the remnant anti aircraft battery.
- ③ Consider the heritage and interpretation opportunities associated with the range stop butt and remnant target facilities.
- ④ Buffer zone to the north of the old range to protect areas of archaeological potential.
- ⑤ Buffer zone adjacent to Popplewell Road to protect areas of Aboriginal archaeological potential.

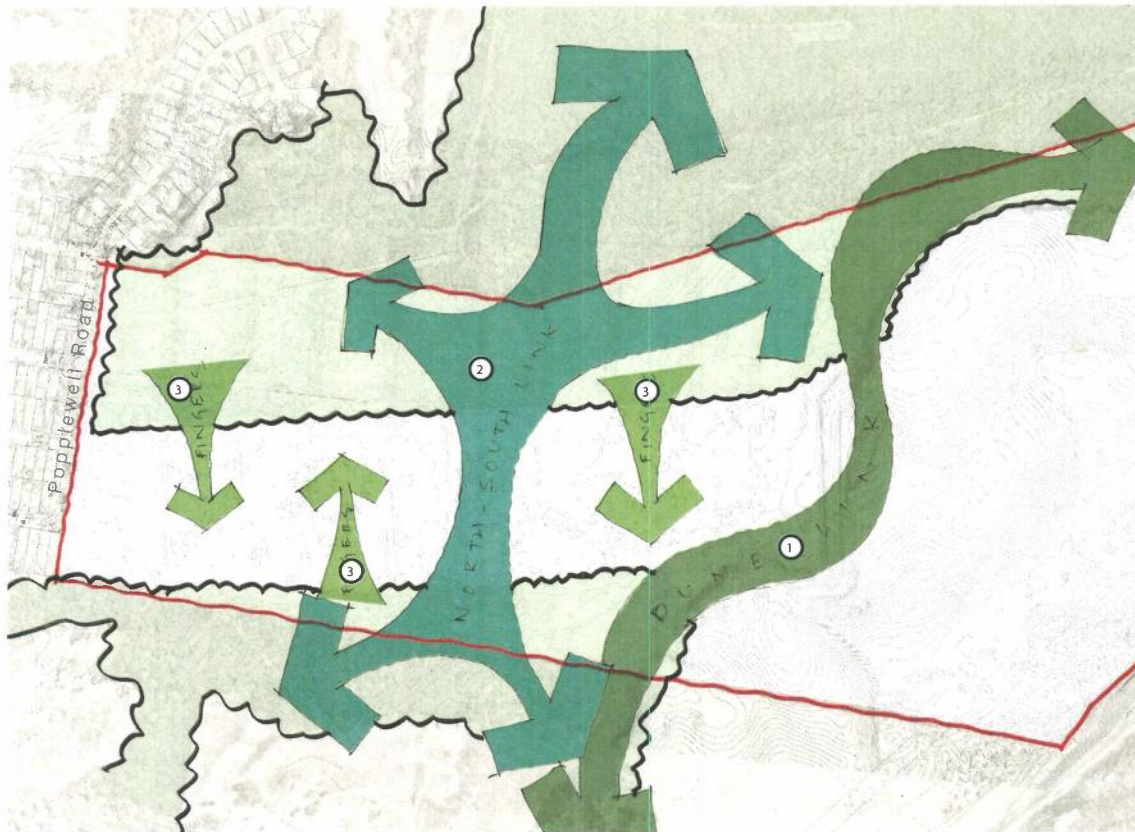
Refer to the Urbis heritage report.



Image: Urbis

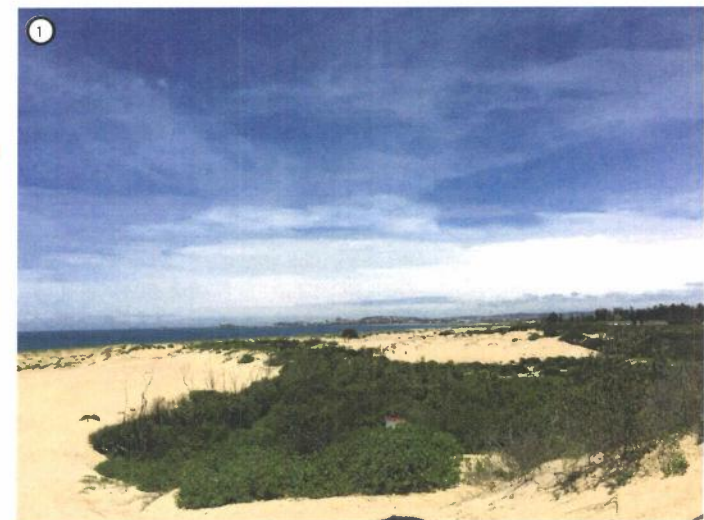


## 5.4 Ecology



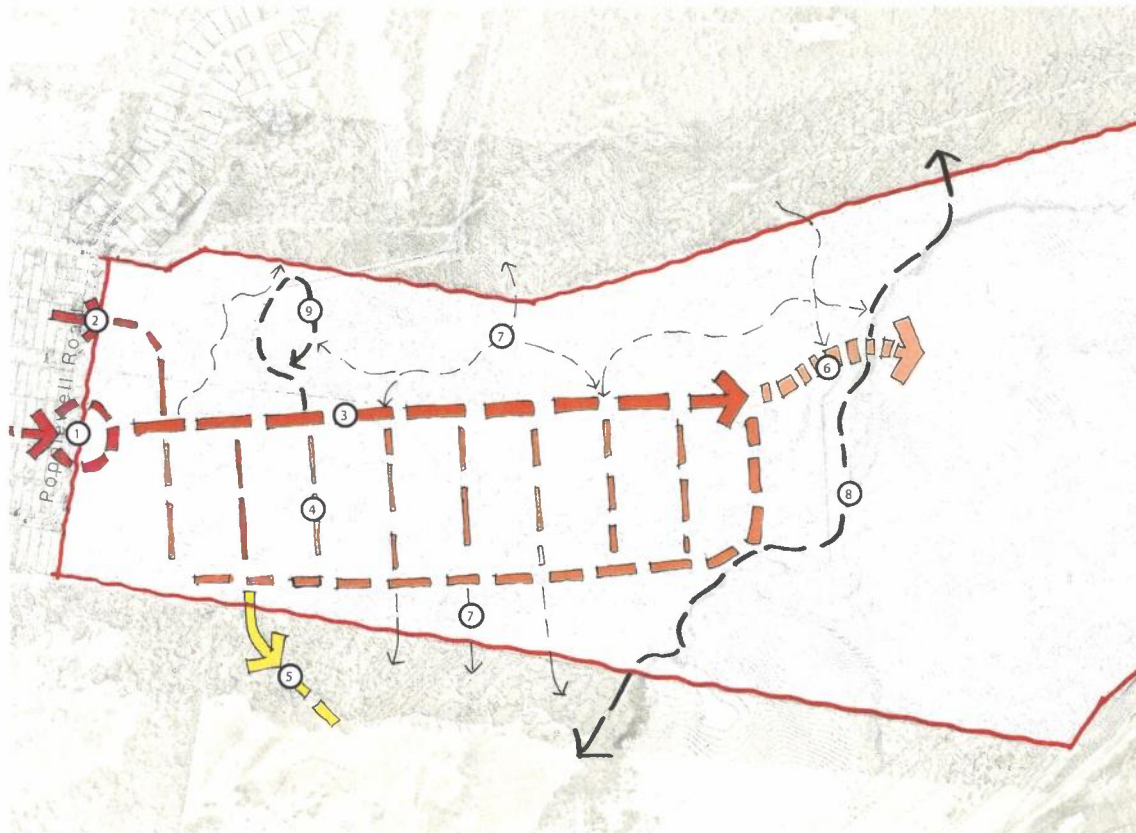
- ① Opportunity to retain and enhance the north-south coastal dune ecology.
- ② Potential to increase north-south ecological links through the site to connect the National Park land with isolated vegetation to the south.
- ③ Opportunity to encourage coastal vegetation communities into the future development site.

Refer to the Umwelt ecology report.





## 5.5 Access and circulation



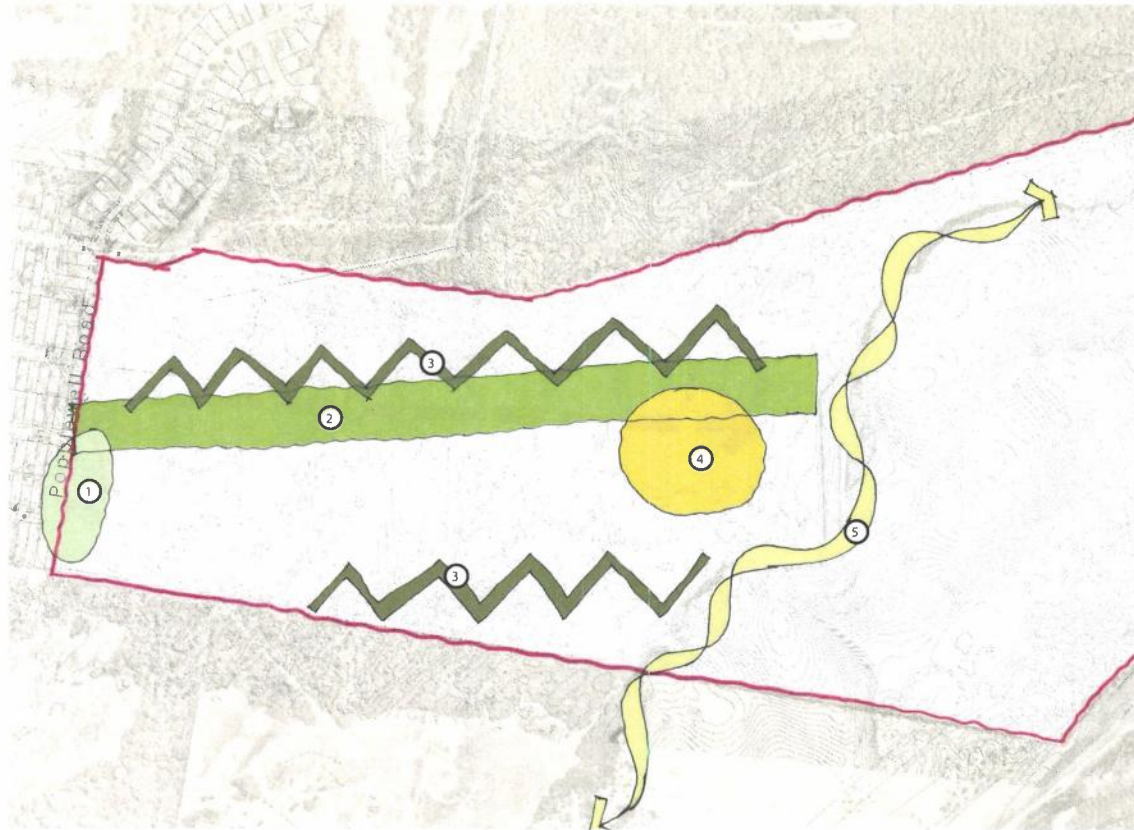
- ① Existing site access from Popplewell Road via Taylor Road.
- ② Potential additional access point via Popplewell Road.
- ③ Potential use of existing rifle range layout/tracks to create primary axis (vehicular and/or pedestrian).
- ④ Potential use of existing rifle range layout/tracks to create secondary street network.
- ⑤ Potential future connection into future development site (Stockton Centre) to the south.
- ⑥ Potential public dune access where existing informal access exists.
- ⑦ Pedestrian tracks/bush links to land to north and south.
- ⑧ Potential north-south pedestrian dune connection - could connect with Stockton to the south and Fern Bay to the north.

Refer to the Better Transport Futures report.





## 5.6 Landscape

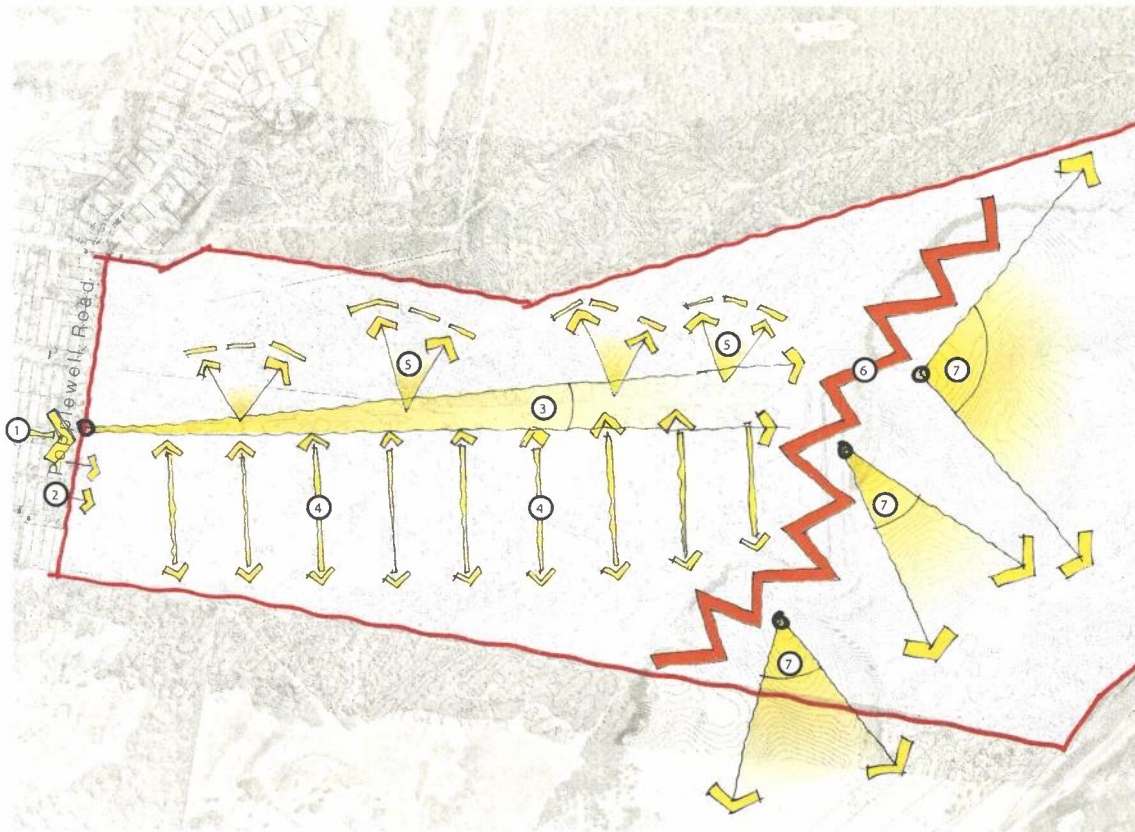


- ① Potential for a landscape interface to Popplewell Street.
- ② Consider a public domain/landscape link to the dunes and Stockton Beach.
- ③ Managed bushland edge to reinforce coastal character.
- ④ Consider a new public open space located within new development.
- ⑤ Potential north-south coastal dune link/bush walk/boardwalk.

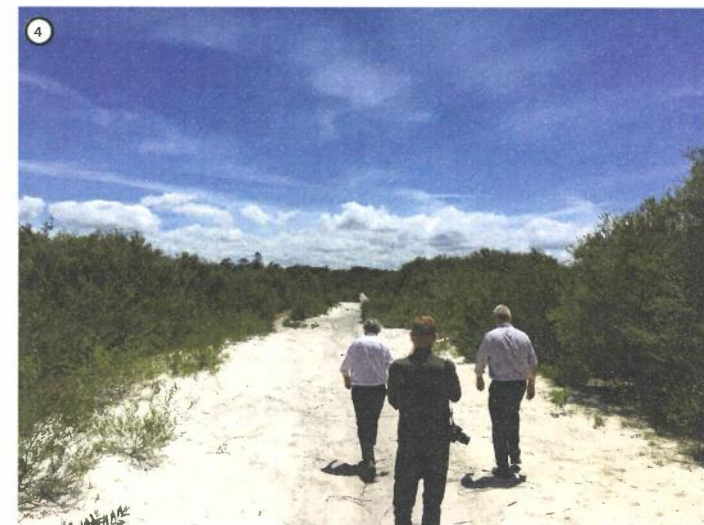




## 5.7 Views

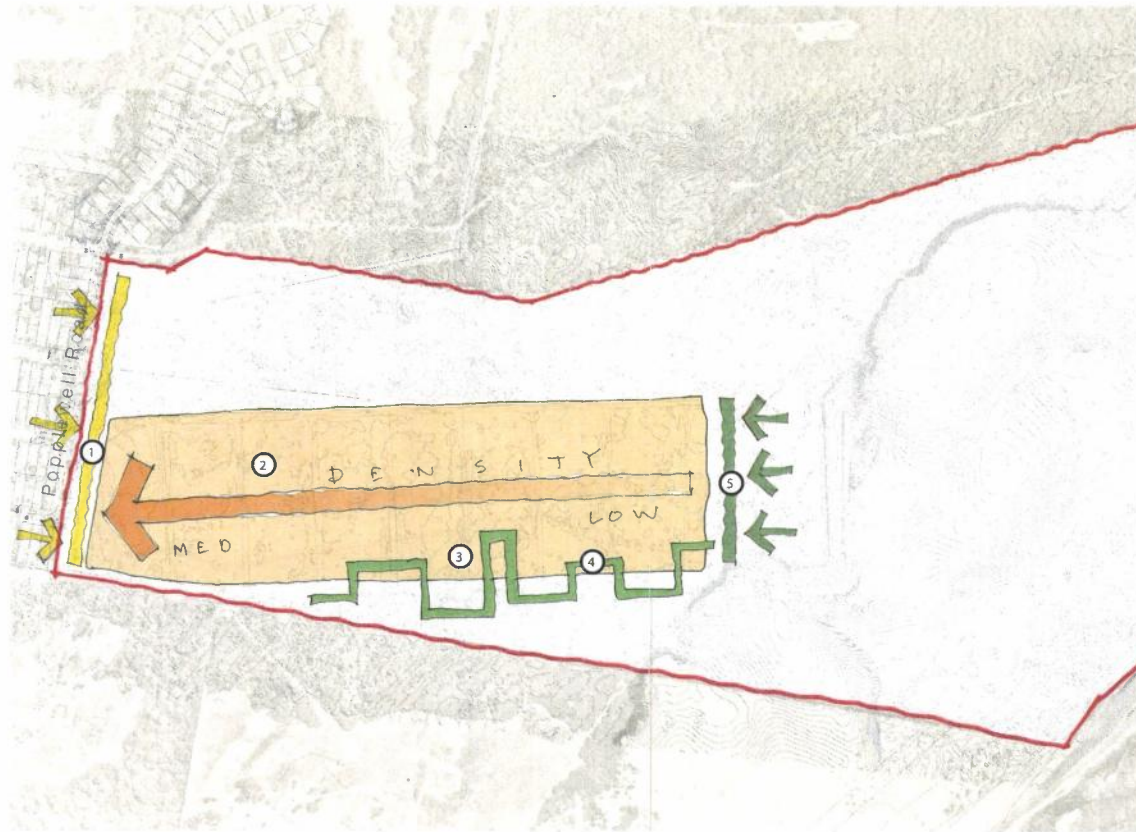


- ① View along Taylor Road to site from Fullerton Street.
- ② Short range views into the site from adjacent street and properties.
- ③ Long view east-west along rifle range to dunes and range target/'Stop Butt'.
- ④ View corridors north-south along range firing mounds.
- ⑤ Localised views north into existing bushland areas.
- ⑥ Major dune formations block views from the rifle range east toward the ocean.
- ⑦ Expansive elevated views over Stockton beach from tops of dunes.





## 5.9 Built form

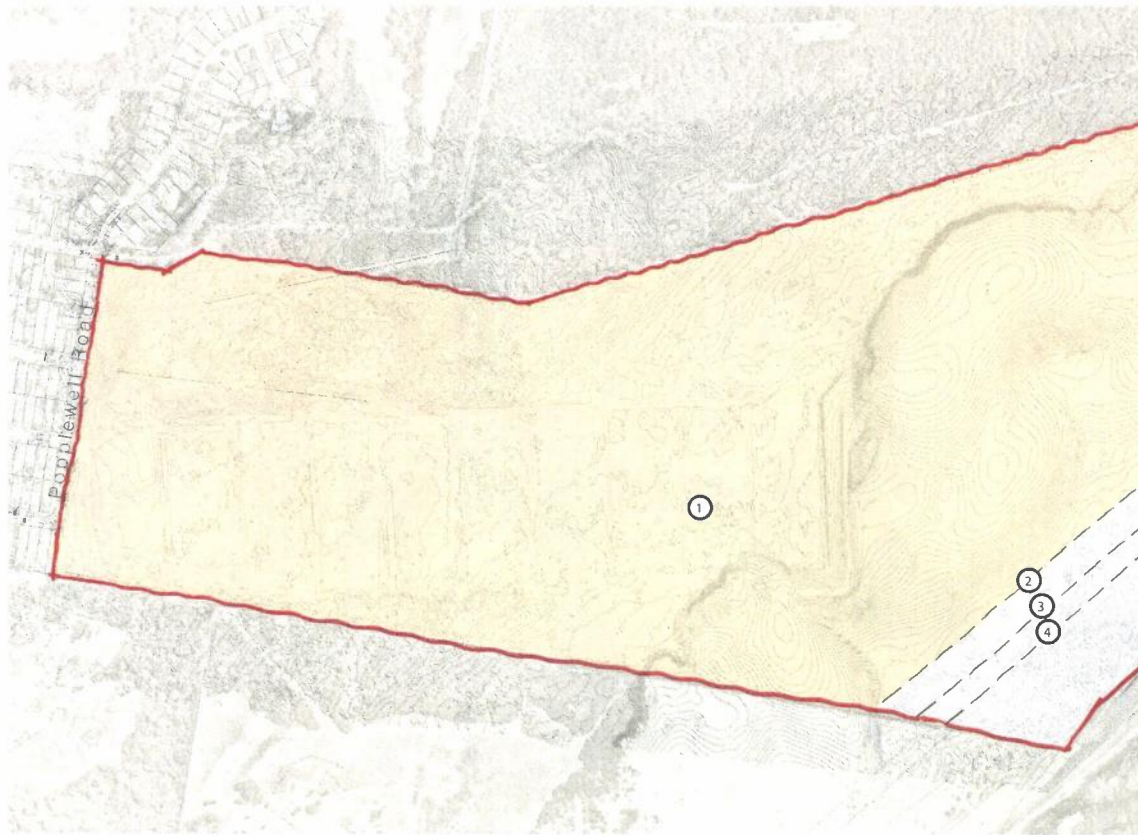


- ① Address the existing surrounding residential streets with the appropriate setback/built form.
- ② Utilise the disturbed flat areas of the rifle range for residential development.
- ③ Utilise housing typologies that sit lightly on the ground and require minimal earthworks - such as raised slab, steel frame construction.
- ④ Moderate the edge conditions to the surrounding bushland areas to increase ecological value and the sense of the coastal location.
- ⑤ Set the development back from the Dune environment to allow for ecological corridors and natural dune migration.



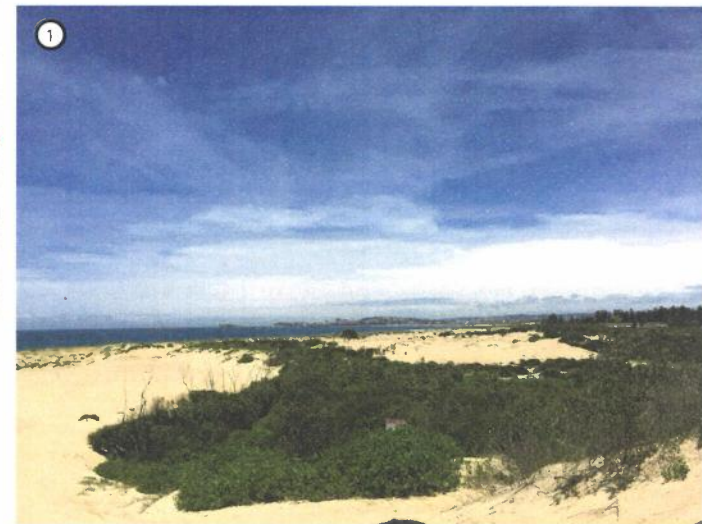


## 5.8 Coastal Erosion



- ① Develop westward of the 'Best Estimate' 2100 Erosion Hazard Line
- ② 'Best Estimate' 2100 Erosion Hazard Line (0.9m sea level rise)
- ③ 'Likely' 2100 Erosion Hazard Line (0.4m sea level rise)
- ④ 'Almost Certain' 2100 Erosion Hazard Line (No sea level rise)

Refer to the BMT WBM coastal engineering report.





## 5.10 Consolidated constraints and opportunities



- ① Existing site access from Popplewell Road via Taylor Road. Potential second access point via Popplewell Road.
- ② Opportunity for a landscape interface to Popplewell Road to provide a green setback to new development and protect areas of Aboriginal archaeological potential.
- ③ Existing vegetation communities retained and protected.
- ④ Opportunity to retain and replant the degraded north-south coastal dune ecology. Potential for a public domain link to Stockton Beach where existing informal access is located.
- ⑤ 'Best Estimate' 2100 Erosion Hazard Line (0.9m sea level rise).
- ⑥ Worimi Regional Park north of the site.
- ⑦ Potential development in disturbed areas free from significant vegetation, heritage items and medium/high/extreme potential coastal erosion risks. Set the development back from the Dune environment to allow for ecological corridors and natural dune migration.
- ⑧ Potential use of existing rifle range layout/tracks to create street network.
- ⑨ Opportunity to encourage coastal vegetation communities into the future development site.
- ⑩ Potential to increase north-south ecological links through the site to connect Worimi bushland with more isolated vegetation to the south. Opportunity for new public open space within the development.
- ⑪ Potential restoration and interpretation of the remnant anti aircraft battery. Opportunity to provide walking tracks for public access to the heritage site.
- ⑫ Adopt sensitive housing designs that are lightweight in appearance, have a strong coastal character and minimise changes to natural water flows and drainage.
- ⑬ Potential future connection into future development site (Stockton Centre) to the south.



# The proposal



## ARTIST'S IMPRESSION OF THE PROPOSED DEVELOPMENT

