



# Referral of proposed action

**Project title:** North Tuncurry Mixed Use Development

## 1 Summary of proposed action

### 1.1 Short description

This referral relates to a proposed mixed use development at The Lakes Way in North Tuncurry, New South Wales.

The development will be staged and will comprise approximately 2,200 – 3,000 dwellings, employment lands, a new local neighbourhood centre incorporating retail, business and commercial floor space, tourist, community and education facilities and open space and environmental conservation areas.

The site is located within the Great Lakes Council urban growth area, and has been earmarked for residential and employment uses within the Great Lakes Council's Forster-Tuncurry Conservation and development Strategy and Forster-Tuncurry Land Implementation Strategy.

### 1.2 Latitude and longitude

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds
NE corner	32	7	25.6146	152	30	34.5054
NW corner	32	7	44.6484	152	29	26.8974
SE corner	32	9	47.7576	152	30	19.476
SW corner	32	9	38.7072	152	29	32.3952

### 1.3 Locality and property description

The North Tuncurry site is located in the Great Lakes Local Government Area approximately 320 kilometres north of Sydney along the NSW coast (**Attachment 1**). The site comprises a 615Ha parcel of land on the eastern side of The Lakes Way, directly to the north of, and adjoining, the Tuncurry town centre. It is an irregular shaped waterfront parcel of land situated on a peninsula that has been created by the Wallamba River to the west. The site is bounded by Nine Mile Beach to the east, The Lakes Way to the west, educational facilities to the south, vacant land and the Tuncurry Waste Management facility to the north.

The site is located within the coastal zone as defined by the *Coastal Protection Act 1979*. It is also a "sensitive coastal location" as defined by State Environmental Planning Policy No. 71 - Coastal Protection (SEPP 71) on the basis that the eastern boundary is within 100m of mean high watermark.

Existing development within the site includes an 18-hole golf course on the southern portion of the site, and a 66kV powerline and associated easement running along the western edge of the site (parallel to The Lakes Way). The site was formerly used as a commercial pine plantation prior to being destroyed by wild fire in 1939. Aerial photography also indicates that the site was subsequently bulldozed in the 1950's and accordingly the current vegetation on site is re-growth.

A number of access roads and tracks traverse the site and provide informal beach access.

### 1.4 Size of the development footprint or work area (hectares)

The site covers an area of approximately 615ha. The proposed development comprises:

- 183 ha residential
- 48 ha employment lands
- 55 ha eco-tourism/ residential
- 60 ha existing golf course
- Open Space and Conservation lands

1.5 **Street address of the site** The site is located on The Lakes Way, immediately adjacent to the Tuncurry town centre.

1.6 **Lot description**  
The site is Crown land under the control of the NSW Land and Property Management Authority, and comprises three allotments. The following tables summarises the site's legal description and ownership details

**Lot description and ownership details**

Lot	DP	Landowner
294	43110	Crown (lease to Forster-Tuncurry Golf Club)
295	43110	Crown (lease to Forster-Tuncurry Golf Club)
331	1104340	Crown land

1.7 **Local Government Area and Council contact (if known)**  
The site is located within the Great Lakes Local Government Area.  
The appropriate contact within the Great Lakes Council is Mat Bell (Senior Ecologist).

1.8 **Time frame**  
It is anticipated that the approvals stage may require from 12 to 36 months, after which time construction of the North Tuncurry development will commence. Accordingly, construction is anticipated to begin in 2014. The project is anticipated to have a development life of about 25 years and would therefore conclude in 2039.

1.9	<b>Alternatives to proposed action</b> Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?	✓	No
			Yes, you must also complete section 2.2
1.10	<b>Alternative time frames etc</b> Does the proposed action include alternative time frames, locations or activities?	✓	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	<b>State assessment</b> Is the action subject to a state or territory environmental impact assessment?		No
		✓	Yes, you must also complete Section 2.5
1.12	<b>Component of larger action</b> Is the proposed action a component of a larger action?	✓	No
			Yes, you must also complete Section 2.7
1.13	<b>Related actions/proposals</b> Is the proposed action related to other actions or proposals in the region (if known)?	✓	No
			Yes, provide details:
1.14	<b>Australian Government funding</b> Has the person proposing to take the action received any Australian Government grant funding to undertake this project?	✓	No
			Yes, provide details:
1.15	<b>Great Barrier Reef Marine Park</b> Is the proposed action inside the Great Barrier Reef Marine Park?	✓	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

## 2 Detailed description of proposed action

### 2.1 Description of proposed action

The NSW Land and Property Management Authority and Landcom are proposing to deliver a mixed use development at North Tuncurry that meets the State Governments' objectives to increase housing supply, provide community benefits and create jobs.

The Project specifically incorporates the following components:

- Approximately 2,200 - 3,000 dwellings, pending the outcomes of technical investigations;
- Incorporation of retail, commercial, educational and community infrastructure and facilities;
- Provision of open space and drainage areas, environmental conservation lands, and local active and passive recreation facilities;
- Road network and utilities (including power, telecommunications and gas); and
- Appropriate conservation of European and Aboriginal heritage located on the site.

A plan showing the Indicative Concept Plan layout has been provided (**Attachment 2**). It should be noted that the Indicative Concept Plan is for illustration purposes only and will be subject to further refinements following the completion of relevant technical investigations and stakeholder consultation. At that time, the number of dwellings/lots will also be confirmed.

A variety of housing types is proposed to be delivered. The range of densities will enable a variety of dwelling types, allow for social / demographic diversity and provide a proportion of dwellings at affordable price points. The Indicative Concept Plan also contemplates locating retail and other employment-generating uses predominantly at the southern end of the site, adjacent to the existing Tuncurry township. Additional employment uses and eco-tourist facilities in the northern portion of the site are also proposed, subject to further investigations confirming site suitability. The existing golf course is proposed to be retained in its current location, and new nature reserves/open space/drainage networks are proposed to extend north-south across the site.

The project provides the opportunity for new localised retail facilities to service the new residential population. There is a clear opportunity to provide a high quality and aesthetically pleasing development which connects to and interfaces with the existing development to the south and the foreshore to the east. The project provides an excellent place-making opportunity on a key, well-located site where demand for additional dwelling stock and mix of residential types is relatively high. The proposed mixed uses provide a rational extension of the existing adjoining land uses on to the site with a reasonable yield in terms of strategic planning for both housing and employment targets.

It is proposed to develop the site progressively over a number of stages.

### 2.2 Alternatives to taking the proposed action

An initial due diligence and preliminary environmental assessment was undertaken to guide the Initial Concept Plan layout. However, there are no alternatives to the proposal.

### 2.3 Alternative locations, time frames or activities that form part of the referred action

There are no alternative locations, time frames or activities that form part of this referred action.

### 2.4 Context, planning framework and state/local government requirements

#### Statutory and Strategic Planning Context

The following key strategic plans, state and local planning instruments, development control plans and contributions plans currently apply to the site and project:

- NSW State Plan;
- Mid North Coast Regional Strategy;
- Forster-Tuncurry Conservation and Development Strategy;
- Forster-Tuncurry Employment Land Implementation Strategy;
- State Environmental Planning Policy (Major Development) 2005;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No. 71 - Coastal Protection (SEPP 71);
- Manning Local Environmental Plan No. 1;
- Great Lakes Local Environmental Plan 1996;
- Various Great Lakes Development Control Plans and policies including:
  - DCP No. 30 - Residential Urban Areas;
  - DCP No. 31 - Subdivision;
  - Draft DCP 34 - Acid Sulfate Soils;
  - Car Parking Policy 2008;
  - Erosion and Sediment Control Policy; and
  - Bicycle Paths;

- Great Lakes Wide Development Contributions Plan (2007);
- Forster District Development Contributions Plan 2009;
- NSW Threatened Species Conservation Act 1995;
- NSW Coastal protection Act 1979;
- Native Vegetation Act 2003; and
- Commonwealth Environment Protection and Biodiversity Conservation Act 1999;

#### Existing Zoning

The Site is currently partly zoned:

- 1(a) Rural under Manning LEP No. 1;
- Coastal Lands Protection Zone 7(f1) under Great Lakes LEP 1996 (GLLEP 1996); and
- Residential 2(a) under GLLEP 1996.

The zone objectives for all of the applicable zones collectively restrict development to those uses which will not:

- compromise the agricultural production potential of land in the 1(a) Rural zone;
- generate significant additional traffic;
- have a significant impact on the areas water resources;
- create unreasonable or uneconomic demands for the provision or extension of public amenities or services;
- lead to the premature and sporadic subdivision of land which would render the economic provision of public utilities and community facilities unreasonably more difficult or expensive once urban development takes place;
- inhibit, in a significant manner, the potential for urban expansion in selected areas, particularly the urban fringe;
- prejudice economic development;
- significantly detract from the scenic quality of the land within the zone; and
- compromise existing significant environmental attributes of land within the zone.

In addition, the objectives of the existing underlying 2(a) Residential zone over part of the site specifically seek to enable low scale residential development and other development which:

- is compatible with a low density residential environment, and
- affords services to residents at a local level, and
- is unlikely to adversely affect the amenity of residential development within the zone, and
- is unlikely to place demands on services beyond the level reasonably required for low-scale housing development.

The current zonings collectively permit (with consent) a variety of agricultural and residential uses. Residential uses and the proposed golf course are consistent with the zone objectives and permissible with development with consent. However, the following other provisions of the Manning LEP and GLLEP 1996 that apply to the site preclude the Project from proceeding as envisaged by LPMA and Landcom:

- minimum lot size of 40ha;
- maximum of 2 dwellings per lot;
- matters that must be considered in relation to development in environmental, rural and residential zones and environmental issues; and
- acid sulphate soils provisions.

#### **Major Development State Environmental Planning Policy 2005**

Clause 6 of the Major Projects SEPP provides that development that in the opinion of the Minister is development of a kind referred to in Schedule 1 (Classes of development) and Schedule 2 (Specified Sites) is declared to be a project to which Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) applies.

Clause 1 of Schedule 2 "Coastal Areas" identifies the following types of development within the coastal zone as Major Development to which Part 3A applies:

##### 1. Coastal areas

(1) *Development within the coastal zone for any of the following purposes:*

- a) subdivision of land into more than 100 lots, if more than 100 lots will not be connected to an approved sewage treatment work or system,*
- b) subdivision for residential purposes of land that is not in the metropolitan coastal zone (unless it is wholly or partly in a sensitive coastal location) into more than 100 lots,*
- c) subdivision for rural-residential purposes of land that is not in the metropolitan coastal zone (unless it is wholly or partly in a sensitive coastal location) into more than 25 lots.*

The Project is within the coastal zone and is development of a kind referred to in the Schedule 2, Clause 1(1)(b) of the Major Development SEPP. Accordingly, the project meets the relevant criteria in the Major Development SEPP for a Part 3A Project. In addition, the site is also identified as a sensitive coastal location under SEPP 71.

In addition, Clause 13 of Group 5 - Residential, commercial or retail projects in Schedule 1 of the Major Development SEPP identifies the following developments as being Part 3A Major Projects:

### 13. Residential, commercial or retail projects

*(1) Development for the purpose of residential, commercial or retail projects with a capital investment of more than \$100 million.*

The infrastructure and early works construction expenditure proposed by LPMA and Landcom is estimated at \$300 million (excluding land acquisition and GST), and is well in excess of the \$100 million threshold under clause 13 of the Major Development SEPP. In addition, the future construction of built form which will be delivered by others is estimated to be in the order of approximately \$700 million.

#### **NSW State Plan and Mid North Coast Regional Strategy**

The NSW State Plan articulates the State's response to Practical Environmental Solutions and Improved Urban Outcomes. In particular, Priorities E4, E5 and E6 acknowledge the need to achieve NSW Government targets for the protection of the natural environment (including native vegetation, biodiversity, and coastal waterways), provide jobs closer to home or within 30 minutes of a major centre, and the impacts of housing supply on affordability. Collectively, the priorities also recognise that there is a need to ensure competitive tension in the supply of land so there is a continuing flow of new properties to the market.

The State Plan does not include specific goals for housing and land supply but refers to the goals set in the Metropolitan and Regional Strategies.

The Mid North Coast Regional Strategy (MNCRS) aims to ensure that adequate land is available and appropriately located to sustainably accommodate the projected housing and employment needs of the regions' population over the next 25 years. The MNCRS, which incorporates the Great Lakes Local Government Area, is the NSW Government's strategic policy position to guide sustainable growth and economic development within the Mid North Coast Region for the period 2006 - 2031. Implementation of the MNCRS is underpinned on a whole of government basis through the Action Plans outlined in the NSW State Plan.

The MNCRS identifies the site as the priority new release area to address the housing needs of the Mid North Coast Region. The commencement of the project will provide a catalyst for development within the mapped future urban release area. The project will deliver a significant component of new residential dwellings and jobs, and the lead in infrastructure required to allow development to proceed. In addition, the project offers the opportunity to potentially set aside ecologically sensitive portions of the site, and protect the coast by limiting urban sprawl and by focusing new settlement in areas, consistent with the aims of the MNCRS.

The project will also ensure that new residential development is provided in Forster-Tuncurry which has been identified as a major town within the region and is capable of accommodating significant development that can be readily serviced and revitalise the Tuncurry township by providing housing choice in an accessible location.

#### **Proposed State Significant Site Listing**

The Department of Planning's "Guideline for State Significant Sites under the Major Projects SEPP" requires consideration of specific criteria when making an application to the Minister to nominate a site as State significant. The North Tuncurry Project Site directly meets the following criteria:

*...the site is of regional or state importance because it is in an identified strategic location (in a State or regional strategy), its importance to a particular industry sector, or its employment infrastructure, service delivery or redevelopment significance in achieving government policy objectives.*

The North Tuncurry Site is identified as a priority new release area in the Department of Planning's MNCRS and its development in the manner proposed will assist in meeting State government residential and employment targets in the Mid North Coast Region. The commencement of this project will provide a catalyst for development within the North Tuncurry area, which is earmarked as a key growth area for urban expansion. The project is consistent with and will assist in the delivery of key outcomes of the NSW State Plan and the Mid North Coast Regional Strategy by contributing to the supply to market of appropriately located land to sustainably accommodate the projected housing and employment needs of the region's population over the next 25 years.

The Project will be able to accommodate in the order of 2,200 - 3,000 residential dwellings (pending outcomes of technical investigations). This represents a significant component of the new dwelling requirements for the Great Lakes LGA proposed in the Strategy.

*....alternative planning or consent arrangements are needed.*

The assessment of the Concept Plan and consideration of the proposed consequential amendments to the underlying land use zoning should be coordinated by a single approval agency to ensure that the strategic planning and development consent outcomes are integrated and determined in a holistic manner.

There are a number of key government stakeholders involved in the delivery of the project: Department of Planning, Great Lakes Council, Roads and Transport Authority (RTA), Department of Environment, Climate Change and Water (DECCW), and the LPMA. In addition, the Site exhibits indigenous heritage values (as outlined below). Coordinated outcomes between State government agencies are required, particularly with respect to ecological and heritage values, transport and physical services infrastructure.

On the basis of the above, there is justification for the Project to be planned, assessed and delivered by the listing of the site as a State Significant Site under Schedule 3 of the Major Development SEPP and the declaration of the Project as a Major Project under clause 6 and Group 13 of Schedule 1 and Clause 1 in Schedule 2 of the SEPP.

*.....the site is significant to the State or region for environmental conservation or natural resource reasons such as sensitive wetlands or coastal areas.*

The significance of the site and Project can be attributed to the opportunities to:

- achieve conservation outcomes through retention of vegetation and conservation of the most sensitive parts of the site (potentially as a conservation off set), thereby protecting an array of vegetation communities, flora and fauna species, and natural landscape features;
- obtain an environmental gain from the resulting conservation outcome and provide an enduring conservation legacy for the community and future generations;
- preserve sensitive coastal ecology, particularly along the Site's foreshore frontage;
- provide public access to and along the foreshore that is not currently available, and protect the visual and natural attributes of the site, consistent with the State Government's coastal policy;
- protect sensitive coastal waterway areas by ensuring an appropriate land/water interfaces; and
- clearly define a sustainable development footprint that satisfactorily addresses EP & A Act objectives regarding the efficient and economic use of land.

*...the site is of State or regional significance in terms of amenity, cultural, heritage, or historical significance*

The site was the subject of a Land Claim under the NSW *Aboriginal Land Rights Act 1983*. The Claim was not pursued following issue of a Certificate by the Minister for Lands under section 36B of the Act.

A Native Title Claim under the Commonwealth *Native Title Act 1993* has been resolved by the recent signing of an Agreement under section 31 of that Act. Negotiation of that Agreement involved considerable discussions with the local Aboriginal Community and revealed strong past links to the site. The Agreement provides for members of the Claimant Group to perform the Indigenous Cultural Heritage Assessment for the site and for the preservation of Aboriginal significant sites. It also provides for negotiation of an appropriate Aboriginal Cultural Heritage Management Plan.

The State Significant Site process offers the opportunity to clearly establish the Site's indigenous values and set aside the most sensitive portions for conservation and cultural purposes (as appropriate), in consultation with DECCW and the Aboriginal community.

### **Threatened Species Conservation Act 1995**

The NSW Threatened Species Conservation Act 1995 is an Act to provide for the conservation of threatened species, populations and ecological communities of animals and plants in NSW. The Act sets out a number of specific objects relating to the conservation of biological diversity and the promotion of ecologically sustainable development. A number of threatened species listed under the TSC Act have been identified within the site.

### **Native Vegetation Act 2003**

The *Native Vegetation Act 2003* regulates the clearing of native vegetation on all land in NSW, except for excluded land listed in Schedule 1 of the Act. The Act outlines what landowners can and cannot do in clearing native vegetation. As the site contains native regrowth vegetation, the *Native Vegetation Act 2003* may be relevant to this project, however under the Part 3A process this Act is not triggered.

### **Coastal Protection Act 1979**

The NSW Coastal Protection Act 1979 makes provisions relating to the use and occupation of the coastal region in order to preserve and protect these areas whilst encouraging sustainable use of the areas. The Act also facilitates the carrying out of certain coastal protection works. The site is located within the coastal zone as defined by the *Coastal Protection Act 1979*.

### **Environment Protection and Biodiversity Conservation Act 1999**

Federal legislation that is relevant to this application includes the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC). The EPBC Act provides a framework to protect and manage national and international significant flora, fauna, ecological communities and heritages places within Australia. It is considered that the development is a controlled action, requiring referral to the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) as part of the approval processes being undertaken by the applicant.

## **2.5 Environmental impact assessments under Commonwealth, state or territory legislation**

Refer to section 2.4 above.

## **2.6 Public consultation (including with Indigenous stakeholders)**

Landcom has recently undertaken consultation with Great Lakes Council and the NSW Department of Environment, Climate Change and Water (DECCW). In addition, the Government Architect Office's Indigenous Design Unit is assisting Landcom and its consultant team with engagement with the local Aboriginal community.

The following provides a summary of the consultation undertaken to date. Notwithstanding, a Communications Strategy is being formalised for the project and includes a detailed consultation and communications programme involving Great Lakes Council, DECCW, the local community, and other relevant identified stakeholders.

### Great Lakes Council

Council's planning for the site at this stage is in the very early phases. However, the site is recognised in a number of strategic planning documents as a future urban growth area and part of the site is already zoned for residential purposes. Whilst residential land uses are currently not permitted over most of the site and Council has not significantly progressed its draft comprehensive Local Environment Plan (LEP), it has expressed support for future development on this site.

Within the Part 3A approvals process Landcom wishes to continue to build a strong and productive relationship with Great Lakes Council and to ensure that Council remains engaged with the delivery of the project over time. Accordingly, Landcom raised the potential opportunity for Council to be delegated the technical assessment on behalf of the Minister, if the Director General wished to pursue such an arrangement. Council's General Manager has verbally indicated that such an arrangement may be positively considered.

Landcom and its ecologists met with Council's Senior Ecologist in March 2011 to discuss the site and project. In particular, the site's ecological values and the presence of the Tuncurry Midge Orchid both on the site and within its vicinity were discussed.

### DECCW

Landcom and its ecologists met with DECCW in September 2010 and March 2011 to discuss the site and project. In particular, the site's ecological values and the presence of the Tuncurry Midge Orchid both on the site and within its vicinity were discussed, as was the need for comprehensive indigenous heritage and archaeological investigations to be undertaken.

### Indigenous Community

Landcom met with Worimi and Birpai Aboriginal Community Representatives on Tuesday 17th January 2011 to discuss the project. The Worimi and Birpai Aboriginal Community Representatives were advised of Landcom's intention to request the Minister for Planning declare the Project a Part 3A major project and consider listing the Site as a State Significant Site.

The discussion particularly focussed on the previous Native Title Claim and the site's opportunities and constraints, including the existing land use and landscape context, existing vehicular and pedestrian access arrangements to and within the site and the foreshore, ecological values, water and drainage patterns, potential internal circulation networks and potential future open space layout and networks.

The Worimi and Birpai Aboriginal Community Representatives indicated they were generally supportive of the Indicative Concept Plan, and particularly the principles Landcom has established in relation to open space connections and the preservation of areas of high significance.

The Worimi and Birpai Aboriginal Community Representatives were also interested in the status and content of the Cultural Heritage Plan which Landcom has committed to preparing as part of the Native Title Agreement. Discussions will continue with the Worimi and Birpai Aboriginal Community Representatives during the preparation of that Plan.

## **2.7 A staged development or component of a larger project**

The referred action is for a staged, mixed use development incorporating a variety of land uses, including residential dwellings, retail, commercial, educational and community infrastructure and facilities, open space areas, environmental conservation lands, recreation facilities, road networks and utilities (including power, telecommunications and gas).

# 3 Description of environment & likely impacts

## 3.1 Matters of national environmental significance

### 3.1 (a) World Heritage Properties

The site is not a World Heritage Area, and is not in close proximity to any such area. Accordingly, the proposed development will not result in any direct, significant impact to any World Heritage Properties.

### 3.1 (b) National Heritage Places

The site is not a National Heritage Place, and is not in close proximity to any such area. Accordingly, the proposed development will not result in any direct, significant impact to any National Heritage Places.

### 3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

The site is not part of any wetlands of international importance (RAMSAR Wetlands), and is not in close proximity to any such area. Therefore the proposed development will not result in any direct, significant impact to any wetlands of international importance.

### 3.1 (d) Listed threatened species and ecological communities

A total of 43 nationally-listed threatened flora and fauna species (including terrestrial, aquatic, marine and pelagic species) and one ecological community listed under the EPBC Act have previously been recorded within a 10km radius of the site, or within similar habitat to that occurring within the site.

Two species listed under the EPBC Act were recorded within the site during field investigations, including the vulnerable *Pteropus poliocephalus* (Grey-headed Flying-Fox), and *Corunastylis littoralis* (Tuncurry Midge Orchid), which is listed as critically endangered under both NSW and Commonwealth legislation. Given the limited known distribution of this species, any development proposal that is likely to involve the removal of individuals or habitat of this species will require specific consideration against relevant significant impact criteria for critically endangered species.

A further 19 species have been deemed to have minimal habitat within the site as they are strictly pelagic species, however may possibly utilise coastal habitat adjacent to site. The potential for any proposal to significantly impact on individuals or local populations for these species will need to be considered under the provisions of the EPBC Act against a specific development proposal, given the potential for increased pressure on the coastal zone strip.

A summary of threatened flora and fauna species listed under the EPBC Act which occur or have the potential to occur within the site has been provided below. A more detailed assessment of species likelihood of occurrence and potential impacts has been included in the Ecological Inventory Report (RPS 2010) (**Attachment 3**), and the following section addresses the nature and extent of likely impacts to those species known to occur on the site.

#### Flora, fauna and ecological communities listed under the EPBC Act which may relate to the site

Species / Community	Status		Likelihood of Occurrence
	EPBC <sup>1</sup>	TSC <sup>2</sup>	
<b>PLANTS</b>			
<i>Allocasuarina defungens</i> Dwarf Heath Casuarina	E	E	<b>Low – Moderate.</b> Not observed during field surveys, however potential habitat exists within the sandy heath communities. It could potentially occur on site.
<i>Allocasuarina simulans</i> Nabiac Casuarina	V	V	<b>Low – Moderate.</b> Not observed during field surveys, however potential habitat exists within the sandy heath communities. It could potentially occur on site.
<i>Asperula asthenes</i> Trailing Woodruff	V	V	<b>Low.</b> Not observed during field surveys and preferred habitat was generally absent due to the lack of wetland areas. Considered unlikely to occur on site.
<i>Corunastylis littoralis</i> Tuncurry Midge-Orchid	CE	CE	<b>High.</b> This species was recorded on site during field investigations.
<i>Cryptostylis hunteriana</i> Leafless-tongue	V	V	<b>Moderate.</b> Not observed during targeted field surveys, however potential habitat exists within the forest/heath communities on site. Due to the cryptic nature of this orchid its occurrence on site cannot



Orchid			be discounted.
<i>Cynanchum elegans</i> White-flowered Wax Plant	E	E	<b>Low.</b> Not recorded within the site during fieldwork and is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Syzygium paniculatum</i> Magenta Lilly Pilly	V	E	<b>Low.</b> Not recorded within the site and preferred habitat is generally absent.
<b>HERPETOFAUNA</b>			
<i>Litoria aurea</i> Green and Golden Bell Frog	V	E	<b>Low.</b> Not recorded during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Mixophyes balbus</i> Stuttering Frog	E	E	<b>Low.</b> Not recorded during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Mixophyes iteratus</i> Giant Barred Frog	E	V	<b>Low.</b> Not recorded during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<b>AVIFAUNA</b>			
<i>Anthochaera phrygia</i> Regent Honeyeater	E	E	<b>Low- Moderate.</b> Not recorded during field survey. Some winter foraging resources are available on site, therefore has potential to occur.
<i>Lathamus discolor</i> Swift Parrot	E	E	<b>Moderate.</b> Not recorded during field survey, however some winter foraging resources are available on site, therefore has the potential to occur on site.
<i>Rostratula australis</i> Australian Painted Snipe	V	E	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<b>PELAGIC SPECIES</b>			
<i>Diomedea exulans amsterdamensis</i> Amsterdam Albatross	E		<p>These species were considered unlikely to occur on site due to their habitat preferences. However it is still possible that one or more may forage, roost or nest along the shoreline and dunes on the periphery and adjacent to the site.</p> <p>Any development would likely lead to an increase in human shoreline activity, which may potentially impact breeding opportunities of some of these species unless appropriately managed.</p>
<i>Diomedea exulans antipodensis</i> Antipodean Albatross	V		
<i>Diomedea exulans exulans</i> Tristan Albatross	E		
<i>Diomedea exulans gibsoni</i> Gibson's Albatross	V		
<i>Diomedea exulans (sensu lato)</i> Wandering Albatross	V		
<i>Macronectes giganteus</i> Southern Giant-Petrel	E		
<i>Macronectes halli</i> Northern Giant-Petrel	V		
<i>Pterodroma leucoptera leucoptera</i> Gould's Petrel	E		
<i>Pterodroma neglecta neglecta</i> Kermadec Petrel	V		
<i>Thalassarche bulleri</i> Buller's Albatross	V		
<i>Thalassarche cauta cauta</i> Shy Albatross, Tasmanian Shy Albatross	V		
<i>Thalassarche cauta salvini</i> Salvin's Albatross	V		
<i>Thalassarche cauta steadi</i> White-capped	V		

Albatross			
<i>Thalassarche melanophris</i> Black-browed Albatross	V		
<i>Thalassarche melanophris impavida</i> Campbell Albatross	V		
<i>Caretta caretta</i> Loggerhead Turtle	E	E	
<i>Chelonia mydas</i> Green Turtle	V	V	
<i>Dermochelys coriacea</i> Leatherback Turtle	E	V	
<i>Natator depressus</i> Flatback Turtle	V		
<b>MAMMALS</b>			
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	V	V	<b>Low.</b> Not recorded during field surveys. Unlikely to occur as no roosting habitat and limited potential foraging habitat exists within the site.
<i>Dasyurus maculatus maculatus</i> Spotted-tailed Quoll	E	V	<b>Low – Moderate.</b> Not detected during field surveys. Nesting habitat is limited however foraging habitat exists and therefore this species has the potential to occur within the site. The sites connectivity to Darawank Nature Reserve may further increase the potential of occurrence.
<i>Potorous tridactylus</i> Long-nosed Potoroo	V	V	<b>Low – Moderate.</b> Not detected during targeted field surveys on site. Some potential habitat exists within heath communities on site and therefore this species has the potential to occur within the site.
<i>Pseudomys novaehollandiae</i> New Holland Mouse	V		<b>Moderate.</b> Not detected during targeted field surveys on site. Some potential habitat exists within heath communities on site and therefore this species has the potential to occur within the site.
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox	V	V	<b>High.</b> This species was recorded on site during field surveys.
<b>ENDANGERED ECOLOGICAL COMMUNITIES</b>			
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia (CE*)	CE		<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
<p><sup>1</sup> Status as listed under the <i>Environment protection and Biodiversity Conservation Act 1999</i> – CE: Critically Endangered; E: Endangered; V: Vulnerable.</p> <p><sup>2</sup> Status as listed under the <i>Threatened Species Conservation Act 1995</i> - CE: Critically Endangered; E: Endangered; V: Vulnerable.</p> <p><sup>3</sup> ROTAP = Rare and threatened plants of Australia. ROTAP codes – 3: Geographic range in Australia &gt;100km; K: poorly known; R: Rare; C: Reserved; -: Reserved population size is not accurately known.</p>			

### Nature and extent of likely impact

A total of 1265 individual *Corunastylis littoralis* (Tuncurry Midge Orchid) plants have been recorded at several locations within the site (**Attachment 4**). An additional 489 individuals have been recorded to the immediate northwest of the site, potentially extending areas of 'core population' as described by Paget (2008).

Targeted surveys detected the orchid within Blackbutt Forest and Heath communities, particularly within areas of previous disturbance but not exclusively. Many additional individuals were also recorded within dense scrub dominated by *Leptospermum polygalifolium* subsp. *polygalifolium*. Additional observations of the orchid were also made within other areas of the site.

The Tuncurry Midge Orchid is endemic to New South Wales where it is known from three populations in a very restricted area of the Forster/Tuncurry district. It has a very restricted known distribution extending 20km north-south and 9km east-west and the total population is estimated to be approximately 1960 plants (RPS, unpub. data, 2010). The main colony at North Tuncurry has a population of approximately 1812 individuals which represents 92% of the currently known population (RPS, unpub. data., 2010). Given the importance of the North Tuncurry orchid population, any development proposal that is likely to involve the removal or disturbance of individuals or habitat of this species will require specific consideration against relevant significance criteria, and the management of this species and its habitat will be a primary consideration for any development activity proposed for this site.

*Pteropus poliocephalus* (Grey-headed Flying Fox) is also known to occur on the site. While this species is listed as vulnerable under the EPBC Act due to declining population numbers, it's distribution is widespread (Bundaberg in Queensland to Melbourne, Victoria), and it has the ability to utilise a variety of vegetation communities for foraging and roosting purposes. As no known roosting camps occur within the site, and given the lack of suitable roost camp locations on site, this species

would be utilising the site as foraging habitat only. Considering the mobility of this species, the occurrence of intact reserved habitats directly to the north, and the probability that foraging to a degree would continue on the site post development, a significant impact is not expected on this species. Accordingly, the following table addresses the significant impact criteria as they relate to the Tuncurry Midge Orchid only.

### Significant impact criteria as they relate to the Tuncurry Midge Orchid within the North Tuncurry site

Significant Impact Criteria	Response
Is the action likely to lead to a long term decrease in the size of a population	<b>Yes</b> – The Tuncurry midge orchid has a very restricted known distribution extending 20km north-south and 9km east-west and the total population is estimated to be approximately 1960 plants.  The removal or disturbance of individual plants from within the site will account for a loss of the known population, which is likely to lead to a decrease in the size of the known population.
Is the action likely to reduce the area of occupancy of the species	<b>Yes</b> – The Tuncurry midge orchid is endemic to New South Wales where it is known from three populations in a very restricted area of the Forster/Tuncurry district.  More than half of the known population occurs within the site. Development within the site has the potential to impact the core population at North Tuncurry through direct and indirect impacts.
Is the action likely to fragment an existing population into two or more populations	<b>Possibly</b> – Depending on the proposed development layout, there is potential for the core population to be fragmented into two or more populations.
Is the action likely to adversely affect habitat critical to the survival of a species	<b>Yes</b> – Development within the site has the potential to adversely affect habitat critical to the survival of this species through clearing and habitat destruction. There is also the potential for edge effects (such as physical disturbance, changes in light penetration, weed infestation and nutrient increase) from adjacent development to lead to habitat degradation or loss (Paget, unpub. data., 2008).
Is the action likely to disrupt the breeding cycle of a population	<b>Possibly</b> – The loss of individual Tuncurry Midge Orchids on site has the potential to disrupt the breeding cycle of the core population of the species.
Is the action likely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	<b>Yes</b> – Development within the site has the potential to adversely affect habitat critical to the survival of this species through clearing and habitat destruction. There is also the potential for edge effects (such as physical disturbance, changes in light penetration, weed infestation and nutrient increase) from adjacent development to lead to habitat degradation or loss (Paget, unpub. data., 2008).

Is the action likely to result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	<b>Possibly</b> – Weed invasion is a key current threat to the Tuncurry Midge Orchid. Due to the species' limited specific habitat it is highly vulnerable to habitat modification as a result of weed colonisation rendering its habitat unsuitable (Paget, unpub. data., 2008). There is potential for edge effects (such as physical disturbance, changes in light penetration, weed infestation and nutrient increase) from adjacent development to lead to habitat degradation or loss (Paget, unpub. data., 2008), however this is largely unknown due to the lack of overall knowledge around this species, recent surveys and overall population dynamics indicate that this species may respond favourably to disturbance. In addition, a large population of rabbits potentially threatens the Tuncurry midge orchid through rabbit browsing (Paget, unpub. data., 2008).
Is the action likely to introduce disease that may cause the species to decline	<b>No</b> – there are no known diseases that are likely to be introduced as a result of the proposed development.
Is the action likely to interfere with the recovery of the species	<b>Possibly</b> – the potential removal or disturbance of a proportion of the know Tuncurry Midge Orchid population has the potential to interfere with the recovery of this species. Conversely, the retention of individuals onsite and offsite, if conserved in perpetuity will significantly aid in the long term recovery of this species.

Mitigation measures for the management of the Tuncurry Midge Orchid have been included in Section 4 of this referral.

### 3.1 (e) Listed migratory species

A total of 44 species listed as marine, wetland or terrestrial migratory species have been recorded within a 10km radius of the site or within similar habitat to that found within the site. Of these, three species were recorded during the field surveys, including *Pandion cristatus* (Eastern Osprey), *Haliaeetus leucogaster* (White-bellied Sea-Eagle) and *Merops ornatus* (Rainbow Bee-eater). *P. cristatus* and *H. leucogaster* are widely distributed along the Australian coast, including coastal islands, while *M. ornatus* is distributed across much of mainland Australia and some near-shore islands. Considering the habitat preferences of these species, and the extent of available habitat surrounding the site the proposed development is not expected to result in any significant adverse impacts on these migratory species.

A further 20 migratory, primarily pelagic species, many of which are also listed as threatened, were assessed as unlikely to occur on site. Accordingly, as it is unlikely that the site may be regarded as 'important habitat' for these species, it is not expected that the proposed action will have significant impacts on these migratory species. However it should be noted that some of these species may have the potential to forage, roost or nest along the shoreline and dunes adjacent to the site. Increased human activity related to the future development of the site, and in particular beach & dune access, will need to be managed accordingly to avoid deleterious impacts on such species.

### 3.1 (f) Commonwealth marine area

The proposed activity on the site will not have a significantly adverse effect on any Commonwealth marine area. Therefore the proposed development will not result in any direct, significant impact to any Commonwealth marine areas.

### 3.1 (g) Commonwealth land

The site is located within 10km of three areas recognised as Commonwealth Lands, including:

- Commonwealth Land – Australian Postal Commission
- Commonwealth Land – Royal Australian Navy Central Canteens Board
- Commonwealth Land – Australian Telecommunications Commission

The proposed development is not expected to result in any detrimental impacts to these abovementioned areas recognised as Commonwealth Lands.

### 3.1 (h) The Great Barrier Reef Marine Park

The site not located within or adjacent to the Great Barrier Reef Marine Park. Therefore the proposed development will not result in any direct, significant impact to any Commonwealth lands.

### 3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

No type of nuclear activity is proposed for the site.

3.2 (a)	Is the proposed action a nuclear action?	✓	No
			Yes (provide details below)
<b>If yes, nature &amp; extent of likely impact on the whole environment</b>			
3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	✓	No
			Yes (provide details below)
<b>If yes, nature &amp; extent of likely impact on the whole environment</b>			
3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	✓	No
			Yes (provide details below)
<b>If yes, nature &amp; extent of likely impact on the whole environment (in addition to 3.1(h))</b>			
3.2 (d)	Is the proposed action to be taken on Commonwealth land?	✓	No
			Yes (provide details below)
<b>If yes, nature &amp; extent of likely impact on the whole environment (in addition to 3.1(i))</b>			
3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	✓	No
			Yes (provide details below)
<b>If yes, nature &amp; extent of likely impact on the whole environment (in addition to 3.1(j))</b>			

### 3.3 Other important features of the environment

#### 3.3 (a) Flora and fauna

The desktop assessment identified a number of State and regionally significant native flora and fauna species that have previously been recorded within 10km of the site, or for which, suitable habitat may exist within the site. The following table provides a summary of flora and fauna species, listed under the TSC Act, which may occur within the general area, and includes an assessment of the likelihood of species occurrence within the site.

#### Flora and fauna species of State or regional conservation significance that may occur within the area

Species / Community	Status <sup>1</sup>	Likelihood of Occurrence
<b>PLANTS</b>		
<i>Eucalyptus fergusonii</i> ssp <i>fergusonii</i>	ROTAP 3KC- <sup>2</sup>	<b>Low – Moderate.</b> Not observed during field surveys, however potential habitat exists within the forest/heath communities on site.
<i>Euphrasia ramulosa</i>	ROTAP 3RC- <sup>2</sup>	<b>Low.</b> Not recorded within the site during fieldwork and unlikely to occur within the site due to the lack of appropriate habitat.
<i>Lindernia alsinoides</i> Noah's False Chickweed	E	<b>Low – Moderate.</b> Not observed during field surveys, however potential habitat exists within the forest/heath communities on site. Due to the cryptic nature of this orchid its occurrence on site cannot be discounted.
<i>Maunderia triglochoides</i>	V	<b>Low.</b> Not observed during field surveys and unlikely to occur as preferred habitat was generally absent due to the lack of wetland areas on site.
<i>Senna acclinis</i> Rainforest Cassia	E	<b>Low.</b> Not recorded within the site and preferred habitat is generally absent.
<b>HERPETOFAUNA</b>		

Species / Community	Status <sup>1</sup>	Likelihood of Occurrence
<i>Crinia tinnula</i> Wallum Froglet	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<b>AVIFAUNA</b>		
<i>Botaurus poiciloptilus</i> Australian Bittern	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Calidris tenuirostris</i> Great Knot	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Calyptorhynchus lathamii</i> Glossy Black-Cockatoo	V	<b>Low – Moderate.</b> Not recorded within the site during fieldwork and only limited preferred foraging resources, such as <i>Allocasuarina sp.</i> are available on site. Some nesting habitat occurs within the Open Forest Communities and therefore this species has some potential to occur within the site.
<i>Charadrius mongolus</i> Lesser Sand Plover	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Daphoenositta chrysoptera</i> Varied Sittella	V	<b>Low – Moderate.</b> Not detected during targeted field surveys on site at the time of survey. Habitat exists within the site and therefore this species has the potential to occur within the site.
<i>Ephippiorhynchus asiaticus</i> Black-necked Stork	E	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Esacus magnirostris</i> Beach-Stone-curlew	CE	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Glossopsitta pusilla</i> Little Lorikeet	V	<b>High.</b> This species was recorded on site during previous field investigations. Potential habitat exists within the site with some foraging opportunities. Nesting and refuge habitat also exists within the hollow bearing trees on site.
<i>Haematopus fuliginosus</i> Sooty Oystercatcher	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Haematopus longirostris</i> Pied Oystercatcher	E	<b>Low – Moderate.</b> Potential sub optimal habitat exists for this species on site and therefore has the potential to occur within the site.
<i>Heiraaetus morphonoides</i> Little Eagle	V	<b>Low – Moderate.</b> Not detected during targeted field surveys on site at the time of survey. However, may occur as some potential habitat and foraging opportunities exists within remnant forest communities.
<i>Ixobrychus flavicollis</i> Black Bittern	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Limosa limosa</i> Black-tailed Godwit	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Lophoictinia isura</i> Square-tailed Kite	V	<b>Low – Moderate.</b> Due to the generalist habitat requirements of this species, it could potentially occur within the site on a seasonal basis.
<i>Ninox connivens</i> Barking Owl	V	<b>Low – Moderate.</b> Not recorded during owl call back and spotlighting surveys. Some potential foraging and roosting opportunities exists on site however this species has a propensity to prefer timbered areas along creek lines which do not occur on site, therefore limiting the possibility of occurrence.
<i>Ninox strenua</i> Powerful Owl	V	<b>Moderate.</b> Not recorded during owl call back and spotlighting surveys. Potential foraging habitat exists within the site. However previous field surveys identified no suitable nesting hollows.
<i>Pandion cristatus</i> Eastern Osprey	V	<b>High.</b> This species was recorded on site during previous field investigations.
<i>Pomatostomus temporalis temporalis</i> Grey-crowned Babbler	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Sterna albifrons</i> Little Tern	E	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<i>Tyto longimembris</i> Eastern Grass Owl	V	<b>Low – Moderate.</b> Not detected during field surveys on site. Habitat exists within the site and therefore this species has the potential to occur within the site.
<i>Tyto novaehollandiae</i> Masked Owl	V	<b>Moderate.</b> Potential foraging habitat exists as part of a larger home range, however a limiting factor would be the limited roosting and breeding habitat exists on site.
<i>Xenus cinereus</i> Terek Sandpiper	V	<b>Low.</b> Not recorded within the site during fieldwork. This species is unlikely to occur within the site due to the lack of appropriate habitat.
<b>MAMMALS</b>		
<i>Cercartetus nanus</i> Eastern Pygmy Possum	V	<b>High.</b> This species was recorded on site during field investigations.

Species / Community	Status <sup>1</sup>	Likelihood of Occurrence
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	V	<b>Moderate.</b> Due to the high mobility of this species the presence of potential foraging and roosting habitat within the site, it is likely that this species occurs within the site on at least an intermittent basis.
<i>Miniopterus australis</i> Little Bentwing-bat	V	<b>High.</b> This species was identified from bat call sequences recorded on site during field surveys.
<i>Miniopterus schreibersii</i> <i>subsp. oceanensis</i> Eastern Bentwing-Bat	V	<b>High.</b> This species was identified from bat call sequences recorded on site during field surveys.
<i>Myotis macropus</i> Southern Myotis	V	<b>Moderate.</b> Habitat exists on site that occurs in close proximity to Forster /Tuncurry's rivers, lakes and estuaries systems (preferred foraging habitat) therefore this species has the potential to occur within the site.
<i>Mormopterus norfolkensis</i> Eastern Freetail-bat	V	<b>High.</b> This species was identified from bat call sequences recorded on site during field surveys
<i>Phascogale tapoatafa</i> Brush-tailed Phascogale	V	<b>High.</b> This species was recorded on site during field investigations.
<i>Phascolarctos cinereus</i> Koala	V	<b>Moderate.</b> Not detected during field surveys on site. Minimal occurrences of SEPP- 44 feed trees were identified on site however Blackbutt trees, that are present on site, are known as secondary browse trees and may provide potential for foraging habitat for dispersing Koala populations.
<i>Petaurus norfolcensis</i> Squirrel Glider	V	<b>High.</b> This species was recorded on site during field investigations.
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheathtail-bat	V	<b>Moderate.</b> Due to the high mobility of this species the presence of potential foraging and roosting habitat within the site, it is likely that this species occurs within the site on at least an intermittent basis.
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	V	<b>High.</b> This species was identified from bat call sequences recorded on site during field surveys.
<i>Syconycteris australis</i> Common Blossom-bat	V	<b>Moderate.</b> Not detected during targeted field surveys on site. Some potential habitat exists within heath/forest communities on site and therefore this species has the potential to occur within the site.
<i>Vespadelus troughtoni</i> Eastern Cave Bat	V	<b>Low – Moderate.</b> Not detected during targeted field surveys on site. Primarily cave-roosting, no roosting habitat recorded within the site. The site may be utilised by this species for foraging within forest vegetation.
<b>Ecological Communities</b>		
Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bio-regions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions.	EEC	<b>Low</b> - Floristic composition commensurate to this EEC was not identified on site during flora assessments. Note: EPBC Equivalent - Littoral Rainforest and Coastal Vine Thickets of Eastern Australia
Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin Bioregion	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Lowland Rainforest on Floodplain in the NSW North Coast Bioregion	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast Sydney Basin and South East Corner Bioregions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Sub-tropical Coastal Floodplain Forest of NSW	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.



Species / Community	Status <sup>1</sup>	Likelihood of Occurrence
North Coast Bioregions		
Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bio-regions	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
Sydney Freshwater Wetlands in the Sydney Basin Bioregion	EEC	<b>Low.</b> Floristic composition commensurate to this EEC was not identified on site during flora assessments.
<sup>1</sup> Status as listed under the Threatened Species Conservation Act 1995 – CE: Critically endangered; E: Endangered; V: Vulnerable; EEC: Endangered Ecological Community. <sup>2</sup> ROTAP = Rare and threatened plants of Australia. ROTAP codes – 3: Geographic range in Australia >100km; K: poorly known; R: Rare; C: Reserved; -: Reserved population size is not accurately known.		

Five threatened flora species were identified through the desktop assessment as potentially occurring within the site. However, the likelihood of these species actually occurring within the site has been assessed as low or low to moderate, based on the ecological requirements of each species and the habitat types and conditions within the site.

Of the 36 threatened fauna species identified through the desktop assessment, nine vulnerable, State listed species were recorded during the field surveys, including two bird species, four microbat species and three arboreal mammals.

*Glossopsitta pusilla* (Little Lorikeet) has a widespread distribution, extending from Far North Queensland to South Australia, throughout which it is commonly found in dry, open eucalypt forests and woodlands. Removal of habitat (Blackbutt Forest) on site will contribute to incremental decline of habitat for this mobile species across its range. While no significant impact on the Little lorikeet is expected as a result of the development, this species should be given consideration when developing mitigation measures to manage fauna within the site.

Given that no nesting sites were identified within the area, and considering the extent of suitable habitat surrounding the site, the development should not significantly impact *Pandion cristatus* (Eastern Osprey).

*Miniopterus australis* (Little Bentwing-bat) and *miniopterus schreibersii subsp. oceanensis* (Eastern Bentwing-bat) were both recorded within the site through call identification. Given the lack of caves or similar roosting habitat on site, these species would be utilising the site as foraging habitat only. Considering the mobility of the species, the occurrence of intact reserved habitats directly to the north, and the probability that foraging to a degree would continue on the site post development, a significant impact is not expected on these species. However, suitable roosting habitat does occur for *Mormopterus norfolkensis* (Eastern Freetail-bat) and *Scoteanax rueppellii* (Greater Broad-nosed Bat). Accordingly, these species may require specific consideration under a Part 3A application. They should also be given consideration in the development of mitigation measures for fauna management within the site.

The three arboreal mammals recorded during the field surveys include *Cercartetus nanus* (Eastern Pygmy Possum), *Petaurus norfolcensis* (Squirrel Glider) and *Phascogale tapoatafa* (Brush-tailed Phascogale). Given that these species are sedentary, development of the majority of the site will likely lead to disruption of local population dynamics, and potential local extinction of these species. These species are likely to require specific consideration under a Part 3A application. They should also be given consideration in the development of mitigation measures for fauna management within the site.

### 3.3 (b) Hydrology, including water flows

The major hydrological feature in the vicinity of the proposed development is the Wallamba River to the west of the site, which flows south into Wallis Lake estuary. Adjacent to the site, the Wallamba River is tidal, and significant mangrove and saltmarsh communities are associated with the downstream limits of the river. The Wallis Lake estuary is a complex system of lakes, rivers and interconnecting channels which separate Tuncurry and Forster. The catchment area for Wallis Lake is approximately 1420km<sup>2</sup>.

In addition, the proposed development is located directly adjacent to Nine Mile Beach. Accordingly, mitigation measures will need to be implemented to minimise any potential impacts to the coastal environment and the downstream receiving environment of Wallis Lake.

### 3.3 (c) Soil and Vegetation characteristics Soils and topography



The site has a relatively level topography with some undulations increasing toward the eastern sector due to coastal dunes. Soils are predominately within the Hawks Nest soil landscape with a small area within the Frogalla Swamp soil landscape unit. Hawks Nest soils are characterised by well drained aeric podsols on older dunes with deep rudosols on younger seaward dunes. Frogalla Swamp soils comprise of poorly drained acid peats/siliceous sands or acid/peat/humic gley intergrades (ERM 2010a).

#### Vegetation Communities

Five vegetation communities have been identified within the site from the surveys conducted to date, including:

- Dry Blackbutt Forest (commensurate to GLCVS MU37)
- Dry Blackbutt Forest (Bloodwood Variant) (commensurate to GLCVS MU37/41)
- Heath / Scrub (commensurate to GLCVS MU223/,224/219)
- Burnt Heath; (commensurate to GLCVS MU223)
- Fore-dune Vegetation (commensurate to GLCVS MU SAND)

The site is predominantly comprised of Heath/Scrub with Dry Blackbutt Forest, occurring in the northern and western sectors of the site and in scattered patches throughout. Some stands of Slash Pine (*Pinus elliotii*) were also scattered throughout the site. The east of the site is bounded by dunal complex vegetation. The site has been subjected to various disturbances as a result of past and present land uses. However vegetation communities are in relatively good condition with few weed species apparent.

While no endangered ecological communities as listed under the TSC Act and/or the EPBC Act occur on site, three of the vegetation communities are regionally significant as described by Great Lakes Council Vegetation Strategy 2005 (GLCVS). These are Dry Blackbutt Forest (commensurate to GLCVS MU 37 and MU 41), which has a moderate to high conservation value containing special local ecological values, Heath/Scrub which is considered to have a moderate to high conservation value as being regionally rare and containing special local ecological values, and Fore-dune Vegetation, which is considered to have a high conservation value (**Attachment 5**).

#### **3.3 (d) Outstanding natural features**

Parts of the site provide connectivity between Darawank Nature Reserve, which covers an area of approximately 575Ha, extensive coastal habitats and forested areas between The Lakes Way and Wallamba River and Millers Mistake Creek beyond the western boundary of the site. As such, the site is recognised as a key fauna habitat and is mapped as part of a regional fauna corridor (DEC 2004, Scott 2003). No other natural features occur within or immediately adjacent to the site.

#### **3.3 (e) Remnant native vegetation**

The site was formerly used as a commercial pine plantation prior to being destroyed by wild fire in 1939. Aerial photography also indicates that the site was subsequently bulldozed in the 1950's and accordingly the current vegetation on site is re-growth rather than remnant vegetation.

#### **3.3 (f) Gradient (or depth range if action is to be taken in a marine area)**

Not Applicable

#### **3.3 (g) Current state of the environment**

Native vegetation communities within the site are in relatively good condition with minor degradation due to weed incursion. A total of seven weed species were recorded during the field investigations. No weeds of national significance were recorded. A number of pest animal species were also recorded during the field investigations, including wild dog, fox, European rabbit, house mouse, black rat, and two introduced bird species, the Common Myna and Spotted Turtle-dove.

#### **3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values**

No Commonwealth heritage places or places recognised as having heritage values have been identified within the site.

#### **3.3 (i) Indigenous heritage values**

The site is not identified as containing registered significant European or Aboriginal cultural heritage items. However, consultation is being undertaken with representatives of the indigenous community and a Cultural heritage plan will be prepared for the site.

#### **3.3 (j) Other important or unique values of the environment**

No other important or unique environmental values have been identified within or immediately adjacent the site.

#### **3.3 (k) Tenure of the action area (eg freehold, leasehold)**

The site is Crown land owned by the State of New South Wales and development is to be undertaken by way of an agreement between NSW Land and Property Management Authority (LPMA) and Landcom.

**3.3 (l) Existing land/marine uses of area**

The majority of the site is currently vacant native regrowth vegetation. Existing development includes an 18-hole golf course on the southern portion of the site, and a 66kV powerline and associated easement running along the western edge of the site (parallel to The Lakes Way). A number of access roads and tracks also traverse the site and provide informal beach access.

**3.3 (m) Any proposed land/marine uses of area**

The development would create a mixed use development estate, comprising residential dwellings, employment lands, a new local neighbourhood centre incorporating retail, business and commercial floor space, tourist, community and education facilities and open space and environmental conservation areas. The proposed development does not include any marine uses.

## 4 Measures to avoid or reduce impacts

As the proposed development is likely to be a controlled action, due to its potential to have an impact on matters on NES, specifically the critically endangered Tuncurry Midge Orchid, mitigation measures will be required to minimise impacts and maintain environmental values within and surrounding the site. Site-specific mitigation measures will be refined and updated as the concept plan progresses.

### Habitat Corridors and Conservation Areas

The indicative concept plan outlines areas of habitat to be retained within the development site to ensure the conservation of the most sensitive areas within the site. Specifically, north-south oriented habitat corridors (100m to 200m in width) will be retained as nature reserves / open space areas / drainage areas along The Lakes Way and existing powerline easement on the western boundary of the site, along the entire eastern boundary of the site, and through the middle of the site connecting to Darawank Nature Reserve in the north.

Habitat within the north-west corner of the site has been assessed as being the 'highest conservation value' area for the Tuncurry Midge Orchid. This area will be retained for the conservation of habitat critical to the survival of the Tuncurry Midge Orchid.

Pro-active management of key habitat areas of the Tuncurry Midge Orchid should also be undertaken, thereby improving long term prospects for the continued viability of this critically endangered species.

### Biodiversity Offsets

The removal of individuals of the Tuncurry Midge Orchid will have an impact on this critically endangered species. Accordingly, where individual plants may require removal, the relocation of individual plants should be undertaken. In addition, a biodiversity offset should be provided outside of the development area to compensate for the potential impacts of the development on the Tuncurry Midge Orchid.

The location and extent of the offset will be refined as the project progresses and developed in close consultation with all relevant authorities and stakeholders. It will require assessment against a specific development proposal, and provided as a component of the rezoning / development application for the site.

The offset should also take into consideration, and provide compensation for, potential impacts on other State and nationally listed species that occur within the site, such as *Petaurus norfolcensis* (Squirrel Glider), *Phascogale tapoatafa* (Brush-tailed Phascogale), *Cercartetus nanus* (Eastern Pygmy Possum) *Pteropus poliocephalus* (Grey-headed Flying-Fox) and a number of threatened micro-bat species recorded on site.

### Coastal Protection

Mitigation measures to ensure protection of the coastal environment adjacent to the site may include the following:

- Retention of a buffer between the proposed development and the sensitive foredune environment. This buffer will also provide a habitat corridor for the movement of native wildlife species throughout the site and to the adjacent Darawank Nature Reserve;
- Any proposed beach or foreshore access will be carefully managed to minimise impacts to the dunes and foreshore, including erosion, damage to native vegetation and destruction or disturbance to potential roosting and nesting habitat for threatened and migratory species. For example, elevated boardwalks may be used to provide controlled access to the beach and foredune areas associated with the proposed development.

### Vegetation Clearing

A strategic approach to vegetation removal and retention should be considered in the site masterplanning phase where possible to ensure a diversity of all habitats for matters of NES with the potential to be impacted upon under this proposal are offered across the site post development.

Any clearing of native vegetation should be undertaken in a sequential manner to allow fauna to move off the site of their own accord. In addition, clearing should be undertaken in the presence of an accredited spotter catcher. Any fauna captured would be relocated in an appropriate nest box positioned in suitable habitat for that species. Any injured fauna would be captured where possible and taken to the local wildlife carer or veterinarian as required.

### Weed Management

Weed management should be following any clearing activities to reduce the likelihood of weed species establishing in sensitive environmental areas, and potentially impacting the habitat of the Tuncurry Midge Orchid. Weed management should then be undertaken on a regular basis.

# 5 Conclusion on the likelihood of significant impacts

## 5.1 Do you THINK your proposed action is a controlled action?

- |                                     |                           |
|-------------------------------------|---------------------------|
| <input type="checkbox"/>            | No, complete section 5.2  |
| <input checked="" type="checkbox"/> | Yes, complete section 5.3 |

## 5.2 Proposed action IS NOT a controlled action.

## 5.3 Proposed action IS a controlled action

### Matters likely to be impacted

<input type="checkbox"/>	World Heritage values (sections 12 and 15A)
<input type="checkbox"/>	National Heritage places (sections 15B and 15C)
<input type="checkbox"/>	Wetlands of international importance (sections 16 and 17B)
<input checked="" type="checkbox"/>	Listed threatened species and communities (sections 18 and 18A)
<input type="checkbox"/>	Listed migratory species (sections 20 and 20A)
<input type="checkbox"/>	Protection of the environment from nuclear actions (sections 21 and 22A)
<input type="checkbox"/>	Commonwealth marine environment (sections 23 and 24A)
<input type="checkbox"/>	Great Barrier Reef Marine Park (sections 24B and 24C)
<input type="checkbox"/>	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
<input type="checkbox"/>	Protection of the environment from Commonwealth actions (section 28)
<input type="checkbox"/>	Commonwealth Heritage places overseas (sections 27B and 27C)

As outlined in Section 3.1(d), the Tuncurry Midge Orchid is endemic to New South Wales where it is known from three populations in a very restricted area of the Forster/Tuncurry district. It has a very restricted known distribution extending 20km north-south and 9km east-west and the total population is estimated to be approximately 1960 plants (RPS, unpub. data., 2010). The main colony at North Tuncurry has a population of approximately 1812 individuals which represents 92% of the currently known population (RPS, unpub. data., 2010). 1265 individual Tuncurry Midge Orchid plants have been recorded at several locations within the site. An additional 489 individuals have been recorded to the immediate northwest of the site.

In accordance with the significant impact criteria for critically endangered species, there is a chance that the removal or disturbance of individual Tuncurry Midge Orchid plants will lead to:

- a long term decrease in the size of the population;
- a reduction in the area of occupancy of the species;
- impact to the area and nature of habitat for this species on site;
- disruption of the breeding cycle of a population;
- modification, destruction, removal, isolation or decreased availability or quality of habitat to the extent that the species is likely to decline;
- the introduction of invasive species that are harmful to a critically endangered or endangered species; and
- interference with the recovery of the species.

## 6 Environmental record of the responsible party

		Yes	No
<b>6.1</b>	<p><b>Does the party taking the action have a satisfactory record of responsible environmental management?</b></p> <p>Landcom is committed to sustainability and reports annually on its sustainability, including biodiversity impacts.</p> <p><a href="http://www.landcom.com.au/AnnualReport2010/">http://www.landcom.com.au/AnnualReport2010/</a></p>	✓	
<b>6.2</b>	<p><b>Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</b></p> <p>No</p>		✓
<b>6.3</b>	<p><b>If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</b></p> <p>Yes please refer to our sustainability targets and annual report, link details provided in 6.1</p>	✓	
<b>6.4</b>	<p><b>Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</b></p> <p>Yes</p> <p>The most recent was the Edmondson Park residential development.</p> <p>Referrals were also done for Rouse Hill Regional Centre, Little Bay and Mount Annan</p>	✓	

# 7 Information sources and attachments

(For the information provided above)

## 7.1 References

Department of Environment, Water, Heritage and the Arts (DEWHA) (2010), EPBC Act Protected Matters Search, viewed 08 April 2010, [http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc\\_report.pl?searchtype=point](http://www.environment.gov.au/cgi-bin/erin/ert/epbc/epbc_report.pl?searchtype=point).

DECCW (2010) Atlas of NSW Wildlife Database. NSW National Parks and Wildlife Service, viewed 04 April 2010.

DECCW (2010) Threatened Species Profiles, Department of Environment Climate Change and Water, viewed 04 April 2010, <http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/index.aspx>

ERM (2005), North Tuncurry – Ecological Constraints & Opportunities, Report to Landcom, dated 20th Oct 2005.

ERM (2010a), Crown Land off the Lakes Way, North Tuncurry – Ecological Assessment, Report to Landcom, dated 12th Jan 2010.

ERM (2010b), Tuncurry Midge Orchid Survey, Letter & Map to Landcom, dated 12th Jan 2010.

Great Lakes Council (2003), Draft Great Lakes Council Vegetation Strategy, Great Lakes Council, Forster NSW.

Great Lakes Council (2005), Great Lakes Council Vegetation Strategy: Eastern Portion Vol1, Great Lakes Council, Forster NSW.

Landcom (2011), Preliminary Environmental Assessment Report, Letter to the Director General – Department of Planning, dated 19 January 2011.

Paget, A (2008), Results of Searches for the Tuncurry Midge-Orchid (*Genoplesium littorale*, *syn* *Corunastylis littoralis*), CMA, Autumn 2008.

RPS (2011), Ecological Inventory North Tuncurry, Unpublished Report to Landcom, dated July 2010.

## 7.2 Reliability and date of information

Various sources of information have been used in preparation of this application including consultant reports, Government databases and mapping, reference books and journal and popular articles. The information provided is understood to be current when reports were issued and searches undertaken. All sources are reliable and there are no uncertainties within the information used.

## 7.3 Attachments

		✓ attached	Title of attachment(s)
<b>You must attach</b>	figures, maps or aerial photographs showing the project locality (section 1)	✓	Attachment 1 - Site Location
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Attachment 2 - Indicative Concept Plan Attachment 4 - Constraints Map Attachment 5 – Vegetation Map
<b>If relevant, attach</b>	copies of any state or local government approvals and consent conditions (section 2.5)		N/A
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		N/A

copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 3 - Ecological Inventory North Tuncurry (RPS 2010)
technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Preliminary Environmental Assessment Report (Landcom 2011)
report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		NIL

## 8 Contacts, signatures and declarations

**Project title:** North Tuncurry Mixed Use Development

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### 8.1 Person proposing to take action

Name Michael Pring  
Title Development Director  
Organisation Landcom  
ACN / ABN (if applicable) ABN: 79 268 260 688  
ACN: 268 260 688  
Postal address PO Box 237 PARRAMATTA 2124  
Telephone (02) 6555 8495  
Email mpring@landcom.nsw.gov.au  
Declaration I declare that the information contained in this form is, to my knowledge, true and not misleading. I agree to be the proponent for this action.  
Signature \_\_\_\_\_ Date 3-5-2011

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### 8.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

Name Matt Doherty  
Title Manager - Ecology & GIS  
Organisation RPS Australia East Pty Ltd  
ACN / ABN (if applicable) ABN: 44 140 292 762  
ACN: 140 292 762  
Postal address PO Box 428, Hamilton NSW 2303  
Telephone (02) 4940 4200  
Email Matt.Doherty@rpsgroup.com.au  
Declaration I declare that the information contained in this form is, to my knowledge, true and not misleading.  
Signature  \_\_\_\_\_ Date 3-5-2011

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# REFERRAL CHECKLIST

## HAVE YOU:

- ✓ Completed all required sections of the referral form?
- ✓ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ✓ Provided a map showing the location and approximate boundaries of the project area?
- ✓ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ✓ Provided complete contact details and signed the form?
- ✓ Provided copies of any documents referenced in the referral form?
- ✓ Ensured that all attachments are less than two megabytes (2mb)?
- ✓ Sent the referral to the Department (electronic and hard copy preferred)?

Attachment 1 – Site Location

Attachment 2 – Indicative Concept Plan

Attachment 3 – Ecological Inventory Report (RPS 2010)

Attachment 4 – Constraints Map

Attachment 5 – Vegetation Map