Australian Government
Department of the Environment and Energy

Title of Proposal - Magenta Shared Pathway Stage 2

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Tourism and Recreation

1.2 Provide a detailed description of the proposed action, including all proposed activities.

It is proposed to construct a 3.7 kilometre long dual-use cycleway and footpath alongside Wilfred Barrett Drive, south from the Wyrrabalong National Park walking track car park to the existing dual-use cycleway and footpath opposite Magenta Shores Golf Course. The proposal will connect the previously constructed dual use paths, forming a continuous path from North Entrance to Canton Beach, NSW. This project is part of Central Coast Council's On Road and Shared Pathway Strategy (Wyong Shire Council 2010) and the pathway will deliver a section of the NSW Coastline Cycleway route, which is identified in the NSW Bike Plan as a continuous cycling and walking route along the entire NSW coastline from Queensland to Victoria.

The finished pathway will be approximately 3 metres wide and its design and construction methods determined by the constraints posed by such things as geotechnical characteristics, ecological features, safety concerns and aesthetics. In general, the pathway works will comprise the following:

1. At-grade pathway - this is the majority of the pathway, as its construction has the least environmental impact and is the most economical option. It will consist of a reinforced concrete course over a granular sub-base. The finished width of the pathway is 3 metres, with 2 metres either side to be disturbed during construction. This disturbed curtilage will be rehabilitated after construction.
2. Suspended pathway - in some sloping parts, a suspended boardwalk structure supported on piers will be used. The pathway will be approximately 2m above the existing surface and construction will be via a temporary track beneath the finished deck. Suspended pathways include safety fencing and are 4 metres wide.
3. Retaining walls - on some slopes, cut and fill will be employed to provide the required grade for the concrete pathway, with the use of stabilising retaining walls made of 0.5 metre wide sandstone blocks.
4. Rest areas – some rest areas for pathway users are to be provided at strategic locations such as where the longitudinal pathway grades extend for more than 20- 30 metres or are above 5%. Such areas are typically 6 x 4 metres.
5. Construction tracks - some construction tracks will be required during the construction phase for the purpose of vehicle tracking. These areas will need to be cleared of vegetation during the construction phase and then rehabilitated. These are mostly associated with suspended parts of the pathway and are 4 metres wide.

Final detailed designs have not yet been developed, as it is dependent on the impact assessment process.

The pathway will require the removal of existing native remnant and regrowth vegetation in the footprint itself as well as in an adjacent construction curtilage. After construction, the pathway will be used by pedestrians and cyclists, as well as by people using other non-motorised recreational equipment, disability aids, prams and strollers.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Approximate route of shared pathway.	1	-33.298512301969	151.53667681477
Approximate route of shared pathway.	2	-33.304968586045	151.52345888874
Approximate route of shared pathway.	3	-33.305578321507	151.52251475117
Approximate route of shared pathway.	4	-33.306223919115	151.52182810566
Approximate route of shared pathway.	5	-33.307120574529	151.52114146015
Approximate route of shared pathway.	6	-33.308411742129	151.52062647602
Approximate route of shared pathway.	7	-33.30977462052	151.52024023792
Approximate route of shared pathway.	8	-33.313504494553	151.51912443897
Approximate route of shared pathway.	9	-33.313504494553	151.51899569294
Approximate route of shared pathway.	10	-33.30862693487	151.52045481465
Approximate route of shared pathway.	11	-33.307120574529	151.52101271412
Approximate route of shared pathway.	12	-33.305721788055	151.52217142842
Approximate route of shared pathway.	13	-33.305255520911	151.52272932789
Approximate route of shared pathway.	14	-33.304896852181	151.52337305805
Approximate route of shared pathway.	15	-33.298404693186	151.53654806874
Approximate route of	16	-33.298512301969	151.53667681477

Area	Point	Latitude	Longitude
shared pathway.			
Approximate route of shared pathway.	17	-33.298512301969	151.53667681477

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The Shared Pathway Stage 2 is located at Magenta, on the coastal sand spit that runs between Norah Head and The Entrance North, separating Tuggerah Lake and the Pacific Ocean. Stage 2 will link the northern and southern sections of an existing shared pathway. The northern end of Stage 2 is located at the picnic area south of Pelican Beach Road, and the southern end is located opposite Beach Avenue.

The route traverses the vegetated parts of Wilfred Barrett Drive's road reserve running between Wyrrabalong National Park and the road. Some of this barrier dune system was mined from the 1950s through to the late 1970s and also experiences regular bushfire. Thus, remnant and regrowth vegetation occurs on the subject site, with varying degrees of weed infestation. The broad vegetation types present include scrub, forest and rainforest.

1.6 What is the size of the development footprint or work area?

Development footprint: 2.075ha permanently alienated and 2.88ha cleared and then rehabilitated.

1.7 Is the proposed action a street address or lot?

Street Address

Wilfred Barrett Drive
Magenta NSW 2261
Australia

1.8 Primary Jurisdiction.

New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

Yes

1.10.1 Is there a local government area and council contact for the proposal?

Yes

1.10.1.0 Council contact officer details

1.10.1.1 Name of relevant council contact officer.

Robert Barwick

1.10.1.2 E-mail

Robert.Barwick@centralcoast.nsw.gov.au

1.10.1.3 Telephone Number

02 4350 5768

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 04/2018

End date 12/2020

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The activity is to be assessed under Part 5 of the NSW Environmental Protection and Assessment Act (1995). Council is the determining authority.

As part of that process, a Review of Environmental Factors is to be prepared, which will contain an Assessment of Significance pursuant to S5A of the EPA Act.

Although Littoral Rainforest occurs on site, the State Environment Planning Policy No. 26 - Littoral Rainforest is not triggered, as the maps prescribed by that SEPP do not show the vegetation on site.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

No consultation has been undertaken as yet.

Consultation is planned to be undertaken as part of the Review of Environmental Factors after the impact assessment process is finalised. Consultation will be undertaken with NPWS due to the close proximity to the National Park. This is required under State Environmental Planning Policy (Infrastructure) 2007.

If required, consultation will include indigenous stakeholders, applying the following "Due Diligence Code of Practice" as provided by the NSW Office of Environment and Heritage.

There are four major steps in the process.

Step 1: Register Search –search the Aboriginal Heritage Information Management System (AHIMS) to ascertain if there are any known sites within or adjacent to the subject area. Background research into any previous surveys in the region would be undertaken for context.

Step 2: Assessment of Landscape – assess the subject area for the presence, nature and level of disturbance of landscape features that may contain Aboriginal heritage sites.

Step 3: Desktop Assessment and Visual Inspection – if any landscape features with potential to contain sites occur within the study area (assessment through aerial photography of the area suggests this to be the case), or there are undisturbed landscapes that cannot be avoided, they should be inspected by a qualified archaeologist. Given the location of the proposal between Tuggerah Lake and Magenta Beach, we believe that a field inspection of the path alignment is warranted for the Due Diligence assessment.

A reconnaissance level field inspection. The field inspection would not be a comprehensive survey of the entire project area however, it would provide an indication of the presence of Aboriginal sites and the potential size of sites if they are present.

Step 4: Complete Report: - a brief report documenting the results of the above steps for inclusion in the REF will be completed. The report will provide information about the location of any known sites and an assessment of the landscape in relation to the potential for the presence of Aboriginal heritage sites to occur.

It is not a requirement under the Due Diligence Code of Practice to consult with the local Aboriginal community. The proposal areas is within the boundaries of the Darkinjung Local Aboriginal Land Council (LALC). If field inspection was to proceed, we would consult with the LALC with regard to the potential inclusion of Aboriginal community representatives.

If Aboriginal heritage sites are identified that cannot be avoided or it is deemed that heritage sites are likely to occur within certain landscapes, further and more detailed assessment leading to an AHIP may be required.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the

project.

A Concept Design Report into the proposal was prepared by GHD (June 2014) and a subsequent Environmental Investigations Advice report prepared by Coast Ecology (May 2016).

As a result of the recommendations from that work, a survey has been conducted and an impact assessment (Biodiversity Assessment) has been by Keystone Ecological (Ashby and McTackett, 2017). Assessments of Significance pursuant to the NSW Environmental Planning and Assessment Act (1979) are an integral part of that report. The Biodiversity Assessment will be included in the Review of Environmental Factors, which is being prepared by NGH Environmental.

The biota targeted for survey and assessment are as per those recommended by the preliminary scoping investigations. The scope of the Biodiversity Assessment is:

Determine the vegetation types and their boundaries by floristic survey, but particularly *Syzygium paniculatum*Survey for amphibiansSurvey for terrestrial and arboreal fauna in general, but particularly: microchiropteran bats amphibians *Pteropus poliocephalus* Grey-headed Flying-foxDetermine the optimal route of the pathway in order to avoid or minimise impact on matters of import Survey data have been collected in accordance with relevant biodiversity assessment guidelines viz. *Flora and Fauna Survey Guidelines, Version 2.2* (Wyong Shire Council, April 2014), *NSW Guide to Surveying Threatened Plants* (OEH 2016), *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities* (NSW DECC November 2014), and *Threatened species survey and assessment guidelines: field survey methods for fauna – Amphibians* (DECC April 2009).

Assessments of Significance for the following NSW-listed biota of concern for which the site provides potential or realized habitat are included in the Biodiversity Assessment:

Endangered Ecological Communities Littoral Rainforest*Swamp Oak Floodplain Forest**Threatened Flora species***Syzygium paniculatum***Threatened Fauna species***Uperoleia mahonyi* Mahony's Toadlet*Pandion cristatus* Eastern Osprey**Haliaeetus leucogaster* White-bellied Sea-eagle**Ptilinopus superbus* Superb Fruit-dove*Ptilinopus regina* Rose-crowned Fruit-dove*Glossopsitta pusilla* Little Lorikeet*Tyto tenebricosa* Sooty Owl*Tyto novaehollandiae* Masked Owl*Ninox connivens* Barking Owl*Ninox strenua* Powerful Owl*Daphoenositta chrysoptera* Varied Sittella*Petaurus norfolcensis* Squirrel Glider*Cercartetus nanus* Eastern Pygmy-possum*Pteropus poliocephalus* Grey-headed Flying-fox**Mormopterus norfolkensis* Eastern Freetail-bat*Miniopterus orianae oceanensis* Eastern Bentwing-bat*Miniopterus australis* Little Bentwing-bat*Myotis macropus* Southern Myotis*Scoteanax rueppellii* Greater Broad-nosed Bat

Those entities also listed under the EPBC Act are denoted with an asterisk.

1.15 Is this action part of a staged development (or a component of a larger project)?

Yes

1.15.1 Provide information about the larger action and details of any interdependency between the stages/components and the larger action.

This part of the pathway is a final link that will ultimately form a network of 40 kilometres of pathway across the Central Coast.

1.16 Is the proposed action related to other actions or proposals in the region?

Yes

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).

This project is the final link in the northern off-road shared pathway network on the Central Coast which, when completed, will deliver over 40 kilometres of off-road, connected shared pathway.

The most recently completed section (1.5km) in this shared pathway network was constructed in 2015/16, directly to the north of this current proposal and examples are illustrated in the uploaded photographs.

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to impact on the members of any listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Littoral Rainforest and Coast Vine Thickets of	This community occurs in the project area in

Species	Impact
Eastern Australia Critically Endangered Ecological Community	two forms: (i) Littoral Rainforest with a diverse structure of trees, palms, vines, and a sparse understorey; and (ii) Littoral Rainforest dominated by vines. Together, they constitute the Critically Endangered Community and occupy 9.92 hectares of the project area. This community will be directly impacted by the pathway as it passes through it for a distance of approximately 2 kilometres, permanently removing 0.759 hectares of this community for the path itself plus approximately 0.005 hectares for rest areas. The edges alongside the pathway and access construction tracks will be also be cleared and disturbed during works across 1.039 hectares. However, the edges and construction tracks will be rehabilitated with appropriate species after works are complete and managed under an Approved Management Plan. Overall, 82% of the occurrence of this community in the project area will remain untouched. It is important to note that the project area contains only a small part of the Littoral Rainforest on the sand spit. The latest vegetation mapping (Bell 2008) shows this vegetation type as occupying 140 hectares. Therefore, the degree of permanent loss of this community is in the order of 0.5%, with a further 0.7% to be temporarily cleared and then rehabilitated. It is considered here that the impact of the proposal on this community is not significant due to the small scale of the losses. The ameliorative measures (rehabilitation of the disturbed curtilage and ongoing weed management) are considered sufficient to control ongoing potential impacts. Moreover, the proposed pathway provides the opportunity to engage the local community with this vegetation, its habitat and its values. For example, educational signage strategically placed at rest areas can deliver an important conservation message. Despite this conclusion regarding a non-significant impact of the proposal, the matter is referred due to the community being Critically Endangered.
Syzygium paniculatum Magenta Lilly Pilly Vulnerable flora species	Six individuals (5 juveniles, 1 adult) and the potential habitat of this Vulnerable flora species

Species	Impact
	within the pathway footprint will be directly impacted. Thirty one individuals were observed in and adjacent to the pathway. The observed population within the project area greatly exceeds this number, with Payne (1997) recording 49 adult trees in this area and 106 mature trees across the Central Coast metapopulation. The Recovery Plan (OEH 2012) estimates that the state-wide population numbers approximately 1,200 trees. Retained individuals adjacent to the pathway may also experience indirect impacts arising from the opening up of otherwise closed forest habitat. However, this species is not necessarily threatened by at least some degree of disturbance. For example, it is known to coppice after fire, with many trees in the project area being multi-stemmed. Also, like many rainforest species, seedling progression may rely on the canopy opening up (OEH 2012), as seedlings beneath adult canopy are thought to be short-lived (Benson and McDougall 1998). The road reserve supports 9.920 hectares of Littoral Rainforest, potential habitat for this species. The pathway will pass through this vegetation over a distance of approximately 2 kilometres, permanently removing 0.759 hectares of potential habitat for this species. The edges alongside the pathway and access construction tracks will be also be cleared and disturbed during works across 1.039 hectares. However, the edges and construction tracks will be rehabilitated with appropriate species after works are complete and managed under an Approved Management Plan. Planting of at least 18 individuals from local provenance material will be part of this rehabilitation. Overall, 82% of the potential and realised habitat of this species in the project area will remain untouched. It is important to note that the project area contains only a small part of the Littoral Rainforest on the sand spit. The latest vegetation mapping (Bell 2008) shows this vegetation type as occupying 140 hectares. Therefore, the degree of permanent loss of this community is in the order of 0.5%, with a further

Species	Impact
	0.7% to be temporarily cleared and then rehabilitated. It is considered here that the impact of the proposal on this species is not significant due to the small scale of the losses and the majority of those being the loss of small juvenile trees. The ameliorative measures (rehabilitation of the disturbed curtilage and ongoing weed management) are considered sufficient to control ongoing potential impacts. Also, plantings at a ratio of 3:1 is considered sufficient to offset those losses. Additionally, the proposed pathway provides the opportunity to engage the local community with the value of this species, its habitat and threats. For example, educational signage strategically placed at rest areas can deliver an important conservation message. Despite this conclusion regarding a non-significant impact of the proposal, the matter is referred due to it being a listed species that will suffer direct losses.
Pteropus poliocephalus Grey-headed Flying-fox Vulnerable species of bat	This species was not observed in the project area during survey but was reportedly observed foraging during survey of Wyrrabalong National Park in 2012 and 2013 (Mjadwesch Environmental Service Support 2013) in the Littoral Rainforest and in the habitats along the Tuggerah Lake foreshore. Coastal habitats with winter-flowering Banksias and Swamp Mahoganies are particularly important to this species when such resources are scarce elsewhere. The proposal will permanently remove approximately 0.759 hectares of Littoral Rainforest, including approximately 8 mature Banksia integrifolia trees, half of those observed along the route. The edges alongside the pathway and access construction tracks will also be cleared and disturbed during works across 1.039 hectares. However, the edges and construction tracks will be rehabilitated with appropriate species after works are complete and managed under an Approved Management Plan. Overall, 82% of the occurrence of this community in the project area will remain untouched. It is important to note that the project area contains only a small part of the Littoral Rainforest on the sand spit. The latest

Species	Impact
	vegetation mapping (Bell 2008) shows this vegetation type as occupying 140 hectares. Therefore, the degree of permanent loss of this community is in the order of 0.5%, with a further 0.7% to be temporarily cleared and then rehabilitated. Banksia integrifolia will be a key species for planting.
Pseudomys novaehollandiae New Holland Mouse Vulnerable species of native rodent	This species was not recorded in the project area during survey. However, a population is known to occur in the surrounding Wyrrabalong National Park and individuals probably use suitable parts of the project area. An active mosaic burn program by NSW NPWS is in place that, among other conservation management objectives, serves to maintain post-fire heath and open forest habitat suitable for this species. The northern end of the project area has been incorporated in this management regime, and the project area supports suitable post-fire habitat in 4.2 hectares of Banksia-Apple Forest that was burnt in August 2014. However, the potential and realised habitat for this species is not confined to the project area, but occurs at least in the other blocks of vegetation that have been burnt less than 6 years previously: 86.7 hectares burnt September 2012, 17.6 hectares burnt August 2013 and 72.2 hectares burnt August 2014 of which the subject site is a part. The proposal will permanently alienate 0.192 hectares of suitable habitat for the pathway and rest areas along a length of approximately 700 metres. A further 0.31 hectares will be temporarily cleared and disturbed in the path’s curtilage and on temporary construction tracks, but these areas will be rehabilitated with suitable local provenance material.
Pseudomys novaehollandiae New Holland Mouse Vulnerable species of native rodent	This species was not recorded in the project area during survey. However, a population is known to occur in the surrounding Wyrrabalong National Park and individuals probably use suitable parts of the project area. An active mosaic burn program by NSW NPWS is in place that, among other conservation management objectives, serves to maintain post-fire heath and open forest habitat suitable

Species	Impact
	for this species. The northern end of the project area has been incorporated in this management regime, and the project area supports suitable post-fire habitat in 4.2 hectares of Banksia-Apple Forest that was burnt in August 2014. However, the potential and realised habitat for this species is not confined to the project area, but occurs at least in the other blocks of vegetation that have been burnt less than 6 years previously: 86.7 hectares burnt September 2012, 17.6 hectares burnt August 2013 and 72.2 hectares burnt August 2014 of which the subject site is a part. The proposal will permanently alienate 0.192 hectares of suitable habitat for the pathway and rest areas along a length of approximately 700 metres. A further 0.31 hectares will be temporarily cleared and disturbed in the path's curtilage and on temporary construction tracks, but these areas will be rehabilitated with suitable local provenance material.

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

Species	Impact
Pandion cristatus Eastern Osprey Migratory species of bird	This species was not observed in the project area, but an individual was observed foraging along the Tuggerah Lake foreshore during this survey and during previous surveys of the adjacent National Park in 2012 and 2013 by Mjadwesch Environmental Service Support (2013). This species is often observed foraging in the waterways around the site and an individual was also noted by Keystone

Species	Impact
	Ecological at The Entrance bridge in February 2017. The site provides marginal potential roosting habitat only, as this species prefers to roost and nest in very tall trees or man-made structures close to its foraging habitat. Local birdwatchers have reported that a pair is currently nesting in a Norfolk Island Pine adjacent to the boatshed on the southern side of The Entrance Bridge. The trees in the project area are generally unsuitable for this species, except perhaps for the tallest trees in the Banksia-Apple Forest. No such trees will be removed. There is unlikely to be any kind of impact on potential habitat for this species as a result of the development of the proposed pathway.
Haliaeetus leucogaster White-bellied Sea-eagle Migratory species of bird	This species was not observed in the project area but has been recorded foraging in Tuggerah Lake and observed within the hind dunes of Magenta Beach in Wyrrabalong National Park (Mjadwesch Environmental Service Support 2013). The project area provides potential roosting / nesting sites in the largest trees, such as the Angophora costata Smooth-barked Apple in the Banksia-Apple Forest around the northern section of the pathway. No such trees will be impacted by the proposed works.
Monarcha melanopsis Black-faced Monarch Migratory Terrestrial species of bird	An individual was observed foraging and another heard calling in the Littoral Rainforest during survey of the project area. This species is recorded regularly by local birdwatchers, with 12 records in the Atlas of Living Australia from Wyrrabalong National Park alone. Suitable foraging and breeding habitat occurs across most of the project area in the Littoral Rainforest. The small area of potential habitat to be removed or disturbed by the construction of the pathway is unlikely to prevent the use of this area by this species for foraging or breeding.
Rhipidura rufifrons Rufous Fantail Migratory Terrestrial species of bird	An individual was observed foraging in the vine thickets of the Littoral Rainforest. Suitable foraging and breeding habitat occurs across the entire project area and undoubtedly hosts more than the individual observed during survey.

Species	Impact
	Although few records are listed in BioNet or ALA databases, local birdwatchers report this species regularly in this area in the summer, with reports to eBird in 2006, 2012 and 2015 (http://www.eremaea.com/). The small area of potential habitat to be removed or disturbed by the construction of the pathway is unlikely to prevent the use of this area by this species for foraging or breeding.

2.5.2 Do you consider this impact to be significant?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action likely to impact on any part of the environment in the Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Will there be any impact on a water resource related to coal / gas / mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The total extent of the **project area** (i.e. the area within which the study was conducted, being the road reserve alongside Wilfred Barrett Drive) is 16.1 hectares.

The **subject site** (i.e. the area directly impacted by the works) is made up of 2.075 hectares that will be permanently alienated (2.053 hectares path itself and approximately 0.022 hectares for rest areas) and 2.88 hectares that will be temporarily impacted (2.77 hectares in a construction curtilage along the edge of the path and 0.109 hectares in construction tracks). This latter area will be rehabilitated.

The proposed pathway is confined to a narrow strip through the road reserve on the northern and western side of Wilfred Barrett Drive. This road bisects the narrow sandy spit that separates the ocean to the east from Tuggerah Lake to the west. Most of this sand spit is naturally vegetated and most of that vegetation is within Wyrrabalong National Park. However, an old landfill site on the eastern side of Wilfred Barret Drive is now occupied by a golf course / residential development. This area (and some other parts of the sand spit) had also been sandmined.

As a result of these past and current land uses, the biota of the site and surrounds has been examined by many others. NSW National Parks and Wildlife have surveyed the fauna as part of its conservation management remit of Wyrrabalong National Park, which is adjacent to the subject site (NSW NPWS 2013, Mjadwesch Environmental Service Support 2013). Local ecologist Robert Payne has investigated the distribution of *Syzygium paniculatum* on this sand spit as part of his Masters thesis regarding its distribution and reproductive ecology (Payne 1991, Payne 1997). During the development of the Magenta Shores golf course project immediately to the south east of the subject site, consultants explored in detail the ecological values, land use history and rehabilitation options (e.g. Hazelton and Clements 2009). Due to a number of different habitats occurring in close proximity, it is also a favoured location for local bird-watchers.

As part of the development process for this pathway, other specific investigations have been undertaken. For the initial design process, GHD (2014) identified the likely presence of a number of Endangered Ecological Communities, and produced a draft route overlain on a map of vegetation types and contours.

Further ecological investigations arose from that report, although these were also still preliminary (Coast Ecology 2016). That report determined the scope of detailed investigations,

which have subsequently been undertaken by Keystone Ecological (final report in preparation). The focus of the study was to:

- Determine the vegetation types and their boundaries by floristic survey, but particularly: *Syzygium paniculatum* - Survey for amphibians - Survey for terrestrial and arboreal fauna in general, but particularly: microchiropteran bats amphibians *Pteropus poliocephalus* Grey-headed Flying-fox - Determine the optimal route of the pathway in order to avoid or minimise impact on matters of import

Vegetation and Flora

After site investigations, four vegetation communities are recognized in the project area:

- Banksia-Apple Forest. - Littoral Rainforest (of two sub-types) - Swamp Oak Forest - Banksia Scrub

The flora species recorded in each is provided in Appendix 1. A map showing their distribution in relation to the proposed pathway is shown in Figure 2.

BANKSIA-APPLE FOREST occurs at the northern end of the project area and occupies 4.20 hectares.

Conservation Status:

Not listed

Other Names:

Coastal Sand Blackbutt Bloodwood Apple Forest (Bell 2002)

Red Gum / Banksia Forest (Coast Ecology 2016)

Determinants:

Quaternary Pleistocene Sand deposits, in areas protected from seaward exposure and with good drainage (Bell, 2002).

Structure:

Upper stratum (10m+): Tall canopy of trees, cover 30-60%

Middle stratum (0.5-2m): Occasional shrubs and small trees, cover 5-15%

Lower stratum (<0.5m): Sparse to moderate ground covers, cover 20-50%

Species:

Upper stratum: *Angophora costata, Banksia serrata*

Middle stratum: *Monotoca elliptica, Acacia suaveolans, Breynia oblongifolia* and young trees

Lower stratum: *Dianella caerulea, Gonocarpus teucrioides, Imperata cylindrica, Pteridium esculentum, Kennedia rubicunda, Tetratheca thymifolia*

Vines: *Smilax glyciphylla, Stephania japonica*

Condition:

Recovering from 2014 fire.

Generally in good condition, with few weeds.

Weeds concentrated at road edge where rubbish dumping also in evidence

Habitat Features:

Hollow-bearing trees (particularly *Angophora costata*). Potentially suitable for owls, possums, gliders, small and medium birds, and microbats

Potential / realised habitat for *Pseudomys novaehollandiae* New Holland Mouse

LITTORAL RAINFOREST occurs across the majority of the site between Banksia-Apple Forest to the north and Banksia scrub to the south. In the project area, it has been differentiated into two forms, depending on the dominance of vines. In total, it occupies 9.92 hectares.

Conservation Status:

Endangered Ecological Community (TSC), Critically Endangered Ecological Community (EPBC)

Other Names:

Littoral Rainforest = Coastal Sand Scrub – Littoral Rainforest (Bell 2002)

Littoral Rainforest vine scrub = Coastal Sand Littoral Rainforest (Bell 2002)

Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (TSC)

Littoral Rainforest and Coastal Vine Thickets of Eastern Australia (EPBC)

Determinants:It occurs in coastal areas on Quaternary Pleistocene Sand deposits, in relatively sheltered but well drained areas (Bell, 2002).

Structure:

Upper stratum (10-20m+): Tall canopy of trees, cover 60% except for viney sub-type, where vines can be up to 100% cover.

Middle stratum (1-10m): Little understorey, mostly vines and small trees. Often dominated by weeds Lantana and Boneseed, average cover 5-15%.

Lower stratum (<0.5m): Very sparse ground cover due to dense upper canopy, cover <5%.

Species:

Upper stratum: *Banksia integrifolia, Endiandra sieberi, Alphitonia excelsa, Acmena smithii, Guioa semiglauca.*

Middle stratum: *Chrysanthemoides monilifera, Breynia oblongifolia, Pittosporum undulatum, Lantana camara, Clerodendrum tomentosum* and young trees.

Lower stratum: *Viola hederacea, Pteridium esculentum, Lomandra longifolia.*

Vines: *Cissus hypoglauca, Cissus antarctica, Smilax australis.*

Condition:

Generally in good condition, with few weeds.

Weeds concentrated at road edge and occasionally in gaps where native vines have not yet dominated.

Rubbish dumping in evidence at edges, but occasionally deeper in forest

Habitat Features:

Hollow-bearing trees. Potentially suitable for owls, possums, gliders, small and medium birds, and microbats. Autumn and winter flowering *Banksia integrifolia* of coastal systems known to be important food source for *Pteropus poliocephalus* Grey-headed Flying-fox.

Potential / realised habitat for *Syzygium paniculatum* Magenta Lilly Pilly.

SWAMP OAK FOREST occurs in a small drainage gully near the southern end of the project area and occupies 0.1 hectares.

Conservation Status:

Endangered Ecological Community (TSC)

Other Names:

Swamp Oak Gully Forest (Coast Ecology 2016)

Coastal Sand Mahogany-Paperbark Swamp Forest (Bell 2002)

Determinants:

Coastal areas on Quaternary Pleistocene Sand deposits, in poorly drained depressions (Bell 2002).

Structure:

Upper stratum (10-20m): Canopy of trees, cover 35%, some vines can for canopies covered by native vines

Middle stratum (to 8m): Mid-storey dominated by weeds (e.g. Lantana, Boneseed) and native vines, average cover 40%

Lower stratum (<0.5m): Dense ground cover of ferns, grasses and graminoids, cover to 60%

Species:

Upper stratum: *Casuarina glauca, Banksia integrifolia*

Middle stratum: *Chrysanthemoides monilifera, Lantana camara, Acetosa sagittata,* occasionally *Acacia longifolia*

Lower stratum: *Conyza* sp.*, Pteridium esculentum, Lomandra longifolia*

Vines: *Cissus antarctica, Smilax australis, Cassytha* sp., *Stephania japonica*

Condition:

Generally in poor condition, with many weeds. This is a function of its location alongside the road plus the delivery of polluted stormwater runoff and rubbish via road drainage system.

Habitat Features:

Potential foraging and sheltering habitat for a number of birds and bat species.

BANKSIA SCRUB occurs at the southern end of the project area and occupies 1.89 hectares, of which 0.38 hectares is made up of dense infestations of Boneseed and Lantana.

Conservation Status:

Not listed

Other Names:

Coastal Sand Holocene Banksia Scrub (Bell 2002)

Determinants:

Occurs in slightly sheltered locations, generally high on the frontal dune system where effects of salt and desiccating winds are reduced.

Structure:

Upper stratum (2m+): Canopy of generally low trees and shrubs with a patchy cover. Occasional emergent tree. In undisturbed parts, has a dense cover of up to 80%.

Middle stratum (1-2m): Shrubs and small trees. In undisturbed parts, has a dense cover of up to 80%.

Lower stratum (<1m): Grasses and graminoids. In undisturbed parts, has a sparse cover of up to 10%.

Species:

Upper stratum: *Banksia integrifolia, Leptospermum laevigatum*

Middle stratum: *Chrysanthemoides monilifera, Lantana camara, Acacia longifolia*

Lower stratum*: Imperata cylindrica, Acetosa sagittata, Lomandra longifolia, Asparagus aethiopicus*

Condition:

Overall in moderate to poor condition, with some patches entirely comprising infestations of Boneseed and / or Lantana.

Habitat Features:

Fauna habitats generally limited.

Provides sheltering opportunities for small birds and reptiles in the dense shrub layers.

Autumn and winter flowering *Banksia integrifolia* of coastal systems known to be important food source for *Pteropus poliocephalus* Grey-headed Flying-fox.

Faunal Assemblage

Fauna survey established the presence of 54 vertebrate species:

2 species of amphibian 4 species of reptiles 37 species of birds 11 species of mammals

See Appendix 2 for details of survey and results.

Amphibians. Due to the general absence of aquatic habitat across the project area, suitable habitat for amphibians is scarce. The small area of Swamp Oak Forest near the southern end of the pathway is an exception. This is located in a small gully at the base of the highest dune and runoff from the road is also directed into this area. Despite it being a hydrological sink, and the occurrence of some rain during survey, no standing water was observed during survey and only two common species of tree frogs were detected.

During fauna surveys of Wyrrabalong National Park, the recently-described species *Uperoleia mahonyi* was recorded in the open sandy floor of Banksia-Apple Forest in 2010, 2012 and 2013 (Mjadwesch Environmental Service Support 2013). It has now been listed as Endangered by the NSW Scientific Committee on an emergency basis, and is therefore worthy of consideration.

It is thought that it is breeding in wetland habitats in the National Park to the north west of the project area and in disused quarries at the base of Norah Head to the north east of the project area (Doug Beckers, personal communication). Therefore, the intervening habitat may serve as non-breeding foraging and dispersal habitat, which includes at least the northern end of the project area.

Reptiles. Few reptiles were observed in the project area during survey, and included two common skinks and two common snakes. The survey of Wyrrabalong National Park (Mjadwesch Environmental Service Support 2013) reported a greater diversity of reptiles, including snakes, dragons and skinks, but none are threatened species.

BIrds. The avifauna of the project area is diverse, representing a number of foraging guilds which reflects the types of habitats available. Notable observations of federally-listed species include the Migratory Black-faced Monarch and Rufous Fantail in the Littoral Rainforest in the project area, and the Eastern Osprey foraging along the Tuggerah Lake foreshore.

Mammals. The mammals detected during survey included small and medium terrestrial species, and arboreal mammals, but the assemblage was overwhelmingly dominated by microbats. Although three bat species are listed threatened species under the TSC Act (*Mormopterus norfolkensis*, and *Falsistrellus tasmaniensis*/*Scoteanax rueppellii)*, none are listed under the EPBC Act.

3.2 Describe the hydrology relevant to the project area (including water flows).

The project area is part of the catchment for Tuggerah Lakes. It is part of an important vegetated buffer to Tuggerah Lake, Tuggerah Nature Reserve and Tuggerah State Conservation Area and represents the only area of intact vegetation along the lake foreshore.

A large wetland occurs within Wyrrabalong National Park 1 kilometre to the north of the project area. This assists in maintaining water quality. The project area does not contain areas of wetland however, the project area is likely to assist in maintaining water quality through the pervious sands.

The area of North Wyrrabalong National Park which adjoins the site has an underlying aquifer which has previously been investigated for use as a residential water supply (NPWS 2013).

The project area is characterised by a series of dunes and swales, but these are closed drainage systems. The only open drainage line occurs where the Swamp Oak Forest is located at the southern end of the project area. No standing or flowing water was observed in the project area at the time of surveys.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The project area is within an area mapped as Tuggerah soil landscape (9131tg).

This is wholly an aeolian landscape on quaternary sands, occurring along the coast of the Central Coast lowlands. Soils on this aeolian landscape are deep (over 200cm) and are dominated by speckled sand, bleached sand and loamy sand. This soil type is highly permeable with low fertility and can be impacted by extreme wind erosion.

The vegetation of the project area is comprised of Banksia-Apple Forest, Littoral Rainforest, Swamp Oak Forest and Banksia Scrub (see Section 3.1 above).

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The site adjoins Wyrrabalong National Park, within which the largest known extent of Coastal Sand Littoral Rainforest occurs.

This area is also known to support a number of other important features, including

- *Syzygium paniculatum*

- SEPP14 Coastal wetlands

- Swamp sclerophyll forest on coastal floodplains EEC

Recently, an amphibian new to science (now named *Uperoleia mahonyi*) was discovered in Wyrrabalong National Park. It is known only from this site and the Tomago sandbeds, and has been listed as an Endangered species by the NSW Scientific Committee on an emergency basis.

3.5 Describe the status of native vegetation relevant to the project area.

Vegetation within the project area is made up of 4 vegetation types:

Banksia / Apple Forest: This vegetation type is dominated by *Angophora costata* and *Banksia serrata* and *Banksia integrifolia*. It is not a listed community of any conservation significance at state or Commonwealth level. In the project area it occupies 4.2 hectares.

Littoral Rainforest (including viney thicket sub-type): This closed forest is dominated by a number of tree species, including *Endiandra sieberi, Banksia integrifolia, Eucalyptus botryoides* and *Livistona australis* and vines such as *Cissus antarctica* and *Smilax australis*. It is listed as an Endangered Ecological Community under state legislation (TSC Act) and Critically Endangered Ecological Community under Commonwealth legislation (EPBC Act). In the project area it occupies 9.92 hectares.

Swamp Oak Forest: This community is dominated by *Casuarina glauca* and *Banksia integrifolia* with occasional occurrences of *Ficus fraseri*. It is listed as an Endangered Ecological Community under state legislation (TSC Act). In the project area it occupies 0.1 hectares.

Banksia Scrub: This community occurs at the southern end of the project area and is highly impacted by Lantana and Boneseed. It is not a listed community of any conservation significance at state or Commonwealth level. In the project area it occupies 1.51 hectares.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The site occurs within range of 0 metres ASL and 30 metres ASL. The majority of the project area occurs at sea level (0 metres ASL) with areas of sand dunes providing depressions and rises in the topography.

3.7 Describe the current condition of the environment relevant to the project area.

Most of the project area is in good condition with few weeds and abundant foraging resources for an array of fauna species. The disturbed and modified places are almost all associated with Wilfred Barrett Drive, and are affected by rubbish that has been dumped or thrown from vehicles, and weed growth. A potential blow out area also occurs on exposed sandy soil within the northern end of the project area.

The Banksia Scrub at the southern end of the project area is severely impacted by weed infestations of Lantana and Boneseed, with 20% of this vegetation type being made up of impenetrable patches.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

Not applicable.

3.9 Describe any Indigenous heritage values relevant to the project area.

Not applicable.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

Council road reserve.

3.11 Describe any existing or any proposed uses relevant to the project area.

The project area is within the road reserve of Wilfred Barrett Drive, a major north-south thoroughfare. It is also traversed by entries to Wyrrabalong National Park, notably at the Lilly Pilly Loop Trail.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

Impacts have been avoided, minimised, ameliorated and offset.

The route of the pathway has been located in order to avoid impacts wherever possible. There have been several iterations of the pathway route, with portions rejected and re-routed in order to:

- avoid incursions into the adjacent National Park;

- avoid stands of *Syzygium paniculatum;*

- avoid opening areas of forest that would increase the potential for weed incursions;

- avoid impacts on all hollow-bearing trees with hollows of a size that is suitable for large forest owls;

- avoid impacts on hollow-bearing trees in general;

- avoid impacts on large and mature trees where possible;

- avoid exposing soil in areas where runaway erosion might occur (such as in dune blowouts); and

- avoid breaking important canopy connectivity.

Some areas of the road reserve were not suitable to construct a pathway, with factors including steep gradients and occurrences of the threatened species *Syzygium paniculatum* Magenta Lily Pilly restricting development options. Within such areas, the only solution to avoid impacts to these important features was to bring the pathway onto the edge of the road where a cycleway currently exists.

Special Root Protection measurements (such as the use of suspended slab construction and

pervious material) are to be engaged where possible for high priority trees identified along the route. The use of these special root protection techniques will allow a large number of canopies (from a range of flora species) to be retained, thus maintaining connectivity of the canopy which is an important ecological feature for a number of fauna species and an important feature for Littoral Rainforest ground processes.

The extent of hollow-bearing trees to be removed by the proposal was significantly minimised during determination of the pathway route. All hollow-bearing trees on and adjacent to the pathway have been located and each tree tagged in the field. To avoid impacts during construction, temporary fencing is to be installed at the base of each nearby hollow tree that is to be retained, in order to avoid accidental damage. All works are to cease by dusk to ensure disturbance to any fauna using hollows is minimised.

In order to avoid and minimise unnecessary impacts to deep gullies and tall sand dunes, suspended pathways will be used. The suspended pathways will minimise disturbances to the vegetation and suitable habitat for fauna. This outcome avoids the increased risks from excavation of sand dunes. Some areas of the road reserve were not suitable to construct a pathway, with factors including steep gradients and occurrences of the threatened species *Syzygium paniculatum* Magenta Lily Pilly restricting development options. Within these areas, the only solution to avoid impacts to these important features was to bring the pathway onto the edge of the road where a cycleway currently exists. This outcome minimises the extent of vegetation required to be removed and modified for the proposal and allows stands of *Syzygium paniculatum* Magenta Lily Pilly to remain intact.

The cleared and disturbed pathway curtilage and construction tracks will be rehabilitated post works. The rehabilitation works will be undertaken as part of an Approved Management Plan and will include the requirement for revegetation using local provenance material only, and appropriate to the subject vegetation community. Recommended compensatory plantings include replacement of the 6 *Syzygium paniculatum* and 8 *Banksia integrifolia* at a ratio of at least 3:1.

Ongoing weed management in the rehabilitation areas will also control new weed incursions, and also provide the opportunity to control weeds not otherwise addressed currently.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

***Syzygium paniculatum* Magenta Lily Pilly**

Surveys of the project area identified at least 31individuals of this species occurring in the project area. These 31individuals range from large, old trees to young juveniles. The proposal will require the removal of a total of 5 young individuals and 1 adult tree. In order to ameliorate the loss of 6 individuals, plantings of this species are to occur at a minimum ratio of 3:1 within the buffer zones and construction tracks that will be regenerated post works. The overarching outcome of the project is to maintain the extent of this threatened species and population.

Littoral Rainforest and Coastal Vine Thickets

The extent of Littoral Rainforest on site totals 9.92 hectares and is made up of the floristically and structurally diverse form of Littoral Rainforest (7.81 hectares) and the less diverse Littoral Rainforest Vine Thickets (2.11 hectares). The proposal will require the removal of 1.77 hectares for the pathway and curtilage. Of this, a total of 1.01 hectares within the curtilage will be revegetated post works with plantings of native species characteristic of Littoral Rainforest. These plantings will include the threatened species *Syzygium paniculatum* Magenta Lily Pilly and all plantings will be of local provenance material (preferably sourced from the site) and planted and managed under an Approved Vegetation Management Plan.

***Pseudomys novaehollandiae* New Holland Mouse**

This species was previously recorded within Wyrrabalong National Park in 1991–1993 after extreme wildfires. Subsequent mosaic fire management has maintained the habitat for this species, with its presence being confirmed in surveys in 2012 and 2013 (Mjadwesch Environmental Service Support 2013).

The area of suitable habitat within the project area is managed by NSW NPWS as part of the ecological burning program and will remain so. Therefore, the direct loss of habitat for this specie will be restricted to the 0.192 hectares to be removed permanently for the pathway itself. Being a species that favours open post-fire environments, the narrow pathway is unlikely to present a barrier to its movements.

***Rhipidura rufifrons* Rufous Fantail and *Monarcha melanopsis* Black-faced Monarch**

These species were observed foraging within the Littoral Rainforest during survey. The site will require the removal of 1.77 hectares of suitable habitat for these highly mobile migratory species. However, the proposal will retain canopy within these areas, and regeneration of 1.01 hectares in the pathway curtilage will minimise the total loss of suitable habitat within the project area.

Suitable habitat for this highly mobile species is largely available within the local area as protected lands. The loss of 1.01 hectares is unlikely to place further stress to this migratory species within the locality.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Scale. The area to be removed and / or disturbed by the proposal is relatively small. The area of Littoral Rainforest in the immediate area on the sand spit between North Entrance and Norah Head is at least 140 hectares, so the area of permanent loss represents only 0.5%. The tenure of most of this occurrence is secure, being in Wyrrabalong National Park. Only 6 *Syzygium paniculatum* need be removed, and 5 of these are juveniles. The losses will be offset by replanting at a ratio of at least 3:1.

Connectivity. Connectivity will be maintained for the species and communities of concern. A 3-metre wide pathway will not prevent the movement of propagules of the plants that make up the Littoral Rainforest, pollinators of *Syzygium paniculatum* flowers or movement of *Syzygium paniculatum* fruit, the movements of migratory birds of the passage of *Pseudomys novaehollandiae* through the landscape.

Management. The disturbed edge of the pathway and any temporary construction tracks are to be rehabilitated and managed under an Approved Management Plan. This will control new and existing weeds around the pathway.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Central Coast Council (Council) was formed on 12 May 2016 by way of the Local Government (Council Amalgamations) Proclamation 2016. The effect of that proclamation was to dissolve the former Wyong and Gosford councils, and form the Council. The Council's position is that it does have a satisfactory record of responsible environmental management and constantly strives to improve its environmental management systems. The Council has not been convicted of any environmental offences, and any environmental management issues which have arisen since the formation of the Council, in the context of its capital works, and asset maintenance operations, have been dealt with promptly and in the most appropriate way to minimise any impact that may be caused to the environment.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

There have been no proceedings against the Council under any Commonwealth, State or Territory law pertaining to the protection of the environment or the conservation and sustainable use of natural resources.

6.3 Will the action be taken in accordance with the corporation's environmental policy and planning framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

The Council is not a corporation under the Corporations Act 2001. It is noted however that the shared pathway project will be the subject of a part 5 environmental assessment, as required under the Environmental Planning and Assessment Act 1979. That assessment will be supported by appropriate environmental studies which have been commissioned by the Council

for the purpose of this referral and the part 5 assessment to be lodged and submitted for review by the development assessment department within the Council. the former WSC Environmental Management System (EMS) continues to apply to operational works in the former Wyong LGA. Should it be required, a copy of the “Wyong Shire Environmental Impact Assessment Manual” can be provided upon request.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Bell, S. (2008) Draft Summary of the Vegetation Map Revision for Wyong LGA	Reliable	Unpublished report and map
Coast Ecology (2016) Environmental Investigations Advice Wilfred Barrett Drive, Magenta Shared Pathway - Stage 2	Reliable	Unpublished report Definitions of vegetation types and delineation of boundaries uncertain
Bell, S. and Driscoll, C. (September 2008) Revised Vegetation Mapping of Wyong LGA: Stage 1 – West of F3 Freeway	Reliable	Unpublished report
Bell, S.A.J. (2002) The natural vegetation of the Wyong Local Government Area, Central Coast, New South Wales. Version 4.0	Reliable	Unpublished report
Coast Ecology (2016) Environmental Investigations Advice Wilfred Barrett Drive, Magenta Shared Pathway - Stage 2	Reliable	Unpublished report Definitions of vegetation types and delineation of boundaries uncertain
Database searches - BioNet, Atlas of Living Australia and Australia's Virtual Herbarium	Variously reliable	Locations and identifications of biota from contributors of varying degrees of expertise
Ecological Surveys and Management, Personal Communication, Robert Payne via email and phone call	Reliable - experienced professional with many years experience in this area including Masters Thesis on Syzygium paniculatum Central Coast population and consultant for Council on the shared pathway to the south	Unpublished report and data
GHD (2014) Wyong Shire	Reliable	Unpublished report Vegetation

Reference Source	Reliability	Uncertainties
Council Magenta to Norah Head Shared Pathway Concept Design Report		boundaries not ground truthed
Hazelton, P. and Clements, A. (2009) Construction of an Environmentally Sustainable Development on a Modified Coastal Sand Mined and Landfill Site – Part 1. Planning and Implementation. Sustainability 1:319-334	Reliable	Published paper in refereed journal
Mjadwesch Environmental Service Support (2013) Wyrrabalong (North) National Park Ground Mammal Survey 2013 Technical Report 0113/200	Reliable	Unpublished report and data
Murphy, C.L. (1993) Soil Landscapes of the Gosford – Lake Macquarie 1:100,000 Sheet Report. Department of Conservation and Land Management	Reliable	NA
Murphy, C.L. and Tille, P.J. (1993) Soil Landscapes of the Gosford – Lake Macquarie 1:100,000 Sheet Map. Department of Conservation and Land Management	Reliable	Produced at 1:100,000 scale
NSW National Parks and Wildlife Service (2013) Wyrrabalong National Park Plan of Management	Reliable	NA
NSW National Parks and Wildlife Service, Personal communication, Doug Beckers via email and phone call	Reliable - experienced professional	Unpublished data
OEH (2012) National Recovery Plan Magenta Lilly Pilly Syzygium paniculatum	Reliable	NA
Bell, S. (2008) Draft Summary of the Vegetation Map Revision for Wyong LGA	Reliable	Unpublished draft report and map
Murphy, C.L. and Tille, P.J. (1993) Soil Landscapes of the Gosford – Lake Macquarie	Reliable	Produced at 1:100,000 scale

Reference Source	Reliability	Uncertainties
1:100,000 Sheet Map. Department of Conservation and Land Management		
Payne, R 1991, 'New findings of the rare tree Syzygium paniculatum (Myrtaceae) in the Wyong area, New South Wales', Cunninghamia 2(3):495-498	Reliable	Published paper in refereed journal
R.J. Payne (1997) The Distribution and Reproductive Ecology of Syzygium paniculatum and Syzygium australe (Myrtaceae) in the Gosford-Wyong Region. Master Natural Resources Thesis, UNE Armidale	Reliable	Only extracts provided by author used
Threatened Species Scientific Committee (TSSC) (2010). Commonwealth Listing Advice on Pseudomys novaehollandiae (New Holland Mouse). Department of the Environment, Water, Heritage and the Arts. Canberra, ACT: Department of the Environment, Water, Heritage and the Arts	Reliable	NA
Threatened Species Scientific Committee (2008) Attachments A, B and C to the Listing Advice for the Littoral Rainforest & Coastal Vine Thickets ecological community. Department of the Environment, Water, Heritage and the Arts	Reliable	NA
Threatened Species Scientific Committee (2008) Commonwealth Listing Advice on Littoral Rainforest and Coastal Vine Thickets of Eastern Australia. Department of the Environment, Water, Heritage and the Arts.	Reliable	NA
Threatened Species Scientific Committee (TSSC) (2010) Commonwealth Conservation	Reliable	NA

Reference Source	Reliability	Uncertainties
Advice on Pseudomys novaehollandiae (New Holland Mouse). Department of the Environment, Water, Heritage and the Arts. Canberra, ACT: Department of the Environment, Water, Heritage and the Arts		
Threatened Species Scientific Committee (TSSC) (2015) Approved Conservation Advice for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia ecological community. Department of the Environment	Reliable	NA

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

No feasible alternatives to the proposal are available. As described previously, the alignment of the pathway has been chosen in order to avoid impacts on biodiversity.

The potential location for the pathway to join the northern and southern sections is confined to the road reserve.

NSW National Parks and Wildlife Service will not countenance the pathway passing through the park.

The Newcastle-Sydney gas pipeline occurs on the opposite side of Wilfred Barrett Drive and construction is prohibited in this corridor.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Australian Government
Department of the Environment and Energy

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

~~Project Manager~~ MANAGER, OPEN SPACE & RECREATION

9.2.2 First Name

~~Robert~~ BRETT

9.2.3 Last Name

~~Barwick~~ SHERAR

9.2.4 E-mail

~~Robert.Barwick@centralcoast.nsw.gov.au~~ BRETT.SHERAR@CENTRALCOAST.NSW.GOVA

9.2.5 Postal Address

PO Box 20
Wyong NSW 2259
Australia

9.2.6 ABN/ACN

ABN

47054613735 - WYONG SHIRE COUNCIL

9.2.7 Organisation Telephone

43505555

Australian Government
Department of the Environment and Energy

9.2.8 Organisation E-mail

ask@centralcoast.nsw.gov.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Declaration

I, Brett Sherar, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 26/4/17

MANAGER, OPEN SPACE + RECREATION. DELEGATED TO AUTHORISE ON BEHALF OF CENTRAL COAST COUNCIL

I, Brett Sherar, the person proposing the action, consent to the designation of Robert Barwick as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 26/4/17

MANAGER, OPEN SPACE + RECREATION. DELEGATED TO AUTHORISE ON BEHALF OF CENTRAL COAST COUNCIL.

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Australian Government
Department of the Environment and Energy

Organisation

9.5 Organisation

9.5.1 Job Title

Project Manager

9.5.2 First Name

Robert

9.5.3 Last Name

Barwick

9.5.4 E-mail

Robert.Barwick@centralcoast.nsw.gov.au

9.5.5 Postal Address

PO Box 20
Wyong NSW 2259
Australia

9.5.6 ABN/ACN

ABN

47054613735 - WYONG SHIRE COUNCIL

9.5.7 Organisation Telephone

43505555

9.5.8 Organisation E-mail

ask@centralcoast.nsw.gov.au

Declaration

I, ROBERT BARWICK, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Australian Government
Department of the Environment and Energy

Signature:..... Date: 26/04/2017.....

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Principal Consultant

9.8.2 First Name

Elizabeth

9.8.3 Last Name

Ashby

9.8.4 E-mail

e.ashby@keystone-ecological.com.au

9.8.5 Postal Address

PO Box 5095
Empire Bay NSW 2257
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9.8.6 ABN/ACN

ACN

099456149 - KEYSTONE ECOLOGICAL PTY LTD

9.8.7 Organisation Telephone

0243681106

9.8.8 Organisation E-mail

e.ashby@keystone-ecological.com.au

Declaration

Australian Government
Department of the Environment and Energy

I, ELIZABETH ASHBY, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature: Elizabeth Ashby Date: 26. Apr. 2017

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. bioasst_part_1_-_text.pdf
2. bioasst_part_2_-_figs1_to_10.pdf
3. bioasst_part_3_-_fig_11.pdf
4. bioasst_part_4_-_figs_12_to_13.pdf
5. bioasst_part_5_-_photographs.pdf
6. bioasst_part_6_-_appendices_1_to_2.pdf
7. bioasst_part_7_-_appendices_3_to_5.pdf
8. coastal_sand_bbutt-bldwood-apple_forest.jpg
9. coastal_sand_holocene_banksia_scrub.jpg
10. coastal_sand_littoral_rainforest.jpg
11. construction_track_and_suspended_pathway.jpg
12. epbc_referral_fauna_appendix.pdf
13. epbc_referral_flora_appendix.pdf
14. epbc_referral_impact_appendix.pdf
15. figure_1_veg_types_distribution.pdf
16. figure_2_impact.pdf
17. finished_pathway_to_north_cropped.jpg
18. kml_and_kmz.zip
19. rest_area_southern_end.jpg
20. retaining_wall.jpg
21. shape_files_-_centreline_w_2m_curtilage.zip