



Office of  
Environment  
& Heritage

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SSD 9536

Mr David Gibson  
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Dear David

**OEH Review of Environmental Impact Statement: Wyong Hospital Expansion (SSD 9536) - 664 Pacific Highway, Hamlyn Terrace – Central Coast LGA**

I refer to your email dated 25 February 2019, seeking comments on the Environmental Impact Statement (EIS) for the proposed Wyong Hospital Expansion (SSD 9536), located at 664 Pacific Highway, Hamlyn Terrace (Lot 1 in DP 1147734), in the Central Coast Local Government Area.

The Office of Environment and Heritage (OEH) has reviewed the EIS, including relevant appendices, annexures, attachments and parts of the document titled '*Wyong Hospital Redevelopment – State Significant DA SSD 9536 – Environmental Impact Statement*' (Prepared by Architectus Group Pty Ltd and dated 12 February 2019) in relation to impacts on biodiversity, Aboriginal cultural heritage and flood management.

OEH's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Steven Cox, Senior Team Leader Planning, on 4927 3140.

Yours sincerely

*Sharon Molloy* 16/4/2019

**SHARON MOLLOY**  
**Director Hunter Central Coast Branch**  
**Conservation and Regional Delivery Division**

Contact officer: STEVEN COX  
02 4927 3140

Enclosure: Attachments A and B

**Attachment A****OEH's recommendations****Wyong Hospital Expansion (SSD 9536)**

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**Biodiversity**

1. Targeted surveys should be undertaken for candidate flora species in accordance with OEH 'NSW Guide to Surveying Threatened Plants' (OEH 2016) and at their appropriate seasonal survey times. If surveys are not undertaken, an expert report should be prepared in accordance with Section 6.5.2 of the BAM guidelines (OEH 2017) or the species should be assumed to be present.
2. OEH recommends the removal of Little Bent-wing Bat entered as species credit species from the biodiversity assessment report and the credit calculator.
3. OEH recommend that the BDAR assess whether the proposal will impact on the pale-headed snake and provided suitable justification if it is determined that there is no suitable habitat present.
4. Table 6.2 (Requirement for species credits) be corrected with the correct area of 0.1 hectares for PCT 1728 'Swamp Oak - Prickly Paperbark - Tall Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast'.

**Flooding and Flood Risk**

5. Changes to flood extent caused by any adjoining development that has been built since the Porters Creek Floodplain Management Study should be considered for the development site.
6. The proponent should demonstrate how it has been concluded that that the proposed roadworks will not result in changes to flood behaviour.
7. The proponent should provide the model assumptions, inputs and outputs associated with the proposed on-site detention and water quality facilities for OEH to review.
8. Consideration should be given to the impact of flooding on access to the hospital. Future road upgrades may be required to improve reliability of access

**Aboriginal cultural heritage**

9. OEH recommends that an ACHMP be prepared in consultation with the registered Aboriginal parties and OEH to ensure that any potential or newly identified Aboriginal sites are appropriately managed and mitigated as required. The ACHMP must be completed and approved prior to any ground surface disturbance works being undertaken.
10. OEH recommends that a re-survey of the project area with the RAPs should occur following surface removal of vegetation. Any Aboriginal objects or sites identified during the re-survey should be managed in accordance with the protocols for newly identified sites in the ACHMP.



## Attachment B

## OEH's detailed comments

## Wyong Hospital Expansion (SSD 9536)

## Biodiversity

OEH has reviewed the document titled '*Biodiversity Development Assessment Report– Wyong Hospital Redevelopment State Significant Development Application No. 9536*' (authored by Travers Bushfire and Ecology and dated November 2018) with respect to biodiversity matters.

1. Threatened flora targeted surveys have not been undertaken

Section 2.5 (Survey Limitations) of the Biodiversity Development Assessment Report (BDAR) states '*Threatened flora survey was limited to opportunistic searches during the random meander transect and did not involve detailed targeted searches*'. This is not in accordance with the Biodiversity Assessment Method (BAM), as random meanders are not considered targeted searches. Random meanders may result in not all potential habitat areas being surveyed and therefore individuals of threatened flora species could be missed during surveys. OEH's requires (as per OEH 2016) spaced parallel transects across all suitable habitat, with the spacing of the parallel transects determined by the species growth habit.

The BAM requires targeted surveys (not opportunistic searches) to be undertaken for all candidate species, unless the species is assumed present or an expert report is provided. These surveys are to be conducted when a species is detectable, such as flowering or fruiting, given that flowering material or fruits are often required for positive identification.

OEH recommends that targeted surveys are to be undertaken for all candidate species. These surveys are to be undertaken, in accordance with OEH '*NSW Guide to Surveying Threatened Plants*' (OEH 2016) and at their appropriate seasonal survey times as specified in the Threatened Biodiversity Data Collection. Additional seasonal information is provided below for each species. Any variation in the survey time from that identified by the Threatened Biodiversity Data Collection should be justified in the BDAR.

- Bynoe's wattle (*Acacia bynoeana*) – flowering mainly in the summer (Harden 2002) from September until March and the fruit matures November to January with the peak fruit maturation occurring in November (Driscoll 2006).
- Charmhaven apple (*Angophora inopina*) – flowers principally between mid-December and mid-January, and also sporadically at other times outside of this period (Bell 2001a); *Angophora inopina* has been confused and probably wrongly determined in many cases as *Angophora floribunda*, principally due to both species possessing rough, fibrous bark, and appearing superficially similar in flower and fruit morphology (Bell 2001a), vegetatively it may be distinguished by its broad, coriaceous leaves with short, broad petioles, whilst its fruit tend to be larger and cup-shaped to pyriform and not as prominently ribbed (Bell 2001a).
- Thick-leaf star-hair (*Astrotricha crassifolia*) – flowers spring (Harden 1992), generally September to December, with non-winged fruits appearing November to December (sometimes later) (Benson & McDougall 1993).
- Netted bottle brush (*Callistemon linearifolius*) – flowers spring to summer (Harden 2002), with Benson & McDougall (1998) specifically noting October to November in the Greater Sydney Region.
- Leafless tongue orchid (*Cryptostylis hunteriana*) – in NSW flowering occurs from December to February (Nicholls 1938, Jones 1993, Harden 1993) though Bell (2001b) states that the Central Coast populations (i.e. Freeman's Waterhole, Vales Point and Wyee) flower in November.
- Rough doubletail (*Diuris praecox*) – has a short flowering season, restricted to August to September, and usually no more than 2 weeks (Benson & McDougall 2005), but

Espallargas (2005) has recorded 3-4 weeks on Tomaree Peninsula; in the Newcastle area tend to flower from last week in July to early August (first two weeks).

- Camfield's stringybark (*Eucalyptus camfieldii*) – flowering period November to December (Brooker & Kleinig 1999).
- Variable midge orchid (*Genoplesium insigne* [listed as *Corunastylis insignis* under the EPBC Act]) – Benson & McDougall (2005) state flowering occurs between August–November.
- Small-flower grevillea (*Grevillea parviflora* subsp. *parviflora*) – flowers from July to December (Benson & McDougall 2000, Makinson 2000, Harden 2002, Fairley 2004); in the Lower Hunter, Lake Macquarie / Newcastle area flowering normally occurs annually between late September and early December (Falding 2013).
- Biconvex paperbark (*Melaleuca biconvexa*) – flowering occurs over just 3 to 4 weeks in September and October (OEH – threatened species profile database, accessed October 2010), though Harden (2002) notes generally summer.
- Tall knot-weed (*Persicaria elatior*) – flowers January to February (February - April for fruiting) (Benson & McDougall 1999); inflorescence required to separate species in genus (i.e. small clusters / individual flowers cf. dense spikes, elongated [as in *Persicaria elatior*] or sub-globose spike-like racemes [Harden 2001]).
- Tranquility mintbush (*Prostanthera askania*) - flowering usually occurs in spring, however, it is known that the timing of both flowering and fruiting can be variable (OEH – Threatened species profile database, accessed September 2015; Conn (1997) states flowering (June–) September–December.
- Heath wrinklewort (*Rutidosis heterogama*) - Harden (1993) notes that it flowers chiefly in autumn, though Bell & Driscoll (2004) note flowering can occur earlier from November to December (in the Lower Hunter and Central Coast); while DECC (2009) recorded it flowering in late March on coastal headlands in the Newcastle area.
- A Black-eyed susan (*Tetradlea glandulosa*) - flowers mostly July to November (Harden 1992).
- Black-eyed susan (*Tetradlea juncea*) – flowers predominantly November to February, though known to flower early from June onwards (Harden 1992, Driscoll 2003); noted infrequently all year under suitable conditions, recorded in late autumn to winter in some sub-coastal populations (e.g. Awabakal NR).

If surveys are not undertaken, an expert report must be prepared in accordance with Section 6.5.2 of the BAM guidelines (OEH 2017) or the species must be assumed to be present. In determining the suitability of an expert, OEH takes the following into account:

- the expert's qualifications such as relevant degrees, post graduate qualifications
- their history of experience in the ecological research and survey method, for the relevant species
- a resume detailing projects pertaining to the survey of the relevant species (including the locations and dates of the work) over the previous 10 years
- relevant peer reviewed publications
- evidence that the person is a well-known authority on the relevant species to which the survey relates.

If candidate species are identified, the BAM Credit Calculator will need to be re-run and the BDAR amended.

### Recommendation 1

Targeted surveys should be undertaken for candidate flora species in accordance with OEH 'NSW Guide to Surveying Threatened Plants' (OEH 2016) and at their appropriate seasonal survey times. If surveys are not undertaken, an expert report should be prepared in accordance with Section 6.5.2 of the BAM guidelines (OEH 2017) or the species should be assumed to be present.

2. Little bent-wing bat 'species credits' should be removed from the assessment



The assessor has incorrectly applied the criteria for generating 'species credits' under the BAM. The assessor has added Little Bent-wing bat, as 'species credits' on the basis they were either recorded during previous field surveys or their habitat (for which a 'species credit' is based on) has been incorrectly identified for the site. 'Species credit' species are identified in OEH's Threatened Species Profile Database on the basis of specific breeding and foraging habitat requirements. They are not based on the presence of a species during a field survey.

Little Bent-wing Bats are listed as a 'species credit' where breeding habitat is present, such as caves, tunnels, mine, culvert or other structure known or suspected to be used for breeding. These features do not occur on site and as such any species credits generated in the BDAR and credit calculator for Little Bent-wing Bats should be removed.

OEH concurs with the BDAR that Southern Myotis and *Eucalyptus camfieldii* are species that generate 'species credits'.

The BAM Credit Calculator will need to be re-run and the BDAR amended.

### Recommendation 2

OEH recommends the removal of Little Bent-wing Bat entered as species credit species from the biodiversity assessment report and the credit calculator.

3. The BDAR needs to provide adequate justification why the pale-headed snake should not generate species credits

Table 6.5 (Species Credit Summary) of the BDAR has a note (Note 1) appended to the pale-headed snake which states: '*Pale-headed Snake is not likely to have suitable habitat. Therefore, species credit requirements for Pale-headed Snake may be discounted in the final report*'. Apart from this broad statement, the BDAR does not assess this species.

The OEH Threatened Species Profile Database states that the pale-headed snake is a highly cryptic species, which is found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest, where it shelters during the day between loose bark and tree-trunks, or in hollow trunks and limbs of dead trees. It can spend weeks at a time hidden in tree hollows. OEH considers suitable vegetated habitat is present on the subject site given the recorded Plant Community Types and the presence of tree hollows (as transcribed on the data sheets).

OEH recommend that the BDAR assess whether the proposal will impact on the pale-headed snake and provided suitable justification as to why suitable habitat is not present. If suitable habitat is present appropriate targeted searches may be required.

If the species is not considered present, BAM Credit Calculator will need to be re-run and the BDAR amended.

### Recommendation 3

OEH recommend that the BDAR assess whether the proposal will impact on the pale-headed snake and provided suitable justification if it is determined that there is no suitable habitat present.

4. Table 6.2 (Requirement for species credits) be corrected

Table 6.2 (Requirement for species credits) in the BDAR incorrectly states the area for PCT 1728 as 1.1 hectares. Table 3.2 (PCTs) states that 0.106 hectares of PCT 1728 '*Swamp Oak - Prickly Paperbark - Tall Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast*' will be impacted upon.

OEH recommends that Table 6.2 be amended with the correct area of 0.1 hectare.

The BDAR will need to be amended.

#### Recommendation 4

Table 6.2 (Requirement for species credits) be corrected with the correct area of 0.1 hectares for PCT 1728 'Swamp Oak - Prickly Paperbark - Tall Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast'.

#### References

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- Bell, S. (2001b) Notes on population size and habitat of the vulnerable *Cryptostylis hunteriana* (Orchidaceae) from the Central Coast of New South Wales. *Cunninghamia*, **7(2)**: 195-204.
- Bell, S. and Driscoll, C. (2004) Population count and assessment of *Rutidosia heterogama* (Asteraceae), Lower Hunter & Central Coast. Report to Wyong Shire Council, Eastcoast Flora Survey, Kotara Fair, NSW.
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- OEH (2017) *Biodiversity Assessment Method*. Office of Environment and Heritage.



## Flooding and Flood Risk

### 5. Flood mapping used to support development does not take account of recent construction

Figure 4 of the Integrated Water Cycle Management and Civil Design SSDA report - Wyong Hospital by Taylor Thompson & Whitting (TTW) February 2019 shows the flood planning area and the probable maximum flood extent on the development site. This has been extracted from the Porters Creek Floodplain Management Study (Cardno 2013).

It is noted that the flood extent partially covers the Hakea Grove aged care development which was not in place at the time the Porters Creek Study was carried out. It is expected that flood extents will change as a result of this development. No further details have been provided within the TTW report regarding flood effects and no detailed flood levels or contours on site are provided. Changes in the flood extent caused by the Hakea Grove development may impact the location of the detention basin on site and/or the access roadway to Louisiana Road.

#### Recommendation 5

Changes to flood extent caused by any adjoining development that has been built since the Porters Creek Floodplain Management Study should be considered for the development site.

### 6. Fill is proposed within a flood affected area without impact assessment

Section 5 of the TTW report indicates that the proposed road connection to Louisiana Road will be raised above existing levels and that this will result in no flood impacts. No details are provided to support this statement, yet it appears that the works may result in encroachment of fill batters on the floodplain.

#### Recommendation 6

The proponent should demonstrate how it has been concluded that the proposed roadworks will not result in changes to flood behaviour.

### 7. No details are provided for on-site detention and water quality management

The TTW report indicates that the proposed development will be drained via an on-site detention basin and water quality management systems that will be constructed as part of early works on the site. No supporting design documentation is provided to demonstrate that these works will adequately mitigate any impacts from the proposed development on water quality or flows to the natural water course on site. Based on the limited information provided, OEH is unable to assess if the proposed water quality management systems will achieve the environmental outcomes described in the EIS.

#### Recommendation 7

The proponent should provide the model assumptions, inputs and outputs associated with the proposed on-site detention and water quality facilities for OEH to review.

### 8. Flood mapping indicates that external access roads are impacted by flooding

Emergency vehicle access to the proposed development will be facilitated via upgrades to the access point from Louisiana Road. The Porters Creek Floodplain Risk Management Study indicates that the Pacific Highway and Louisiana Road are both cut in multiple locations by floods of varying magnitude.

#### Recommendation 8

Consideration should be given to the impact of flooding on access to the hospital. Future road upgrades may be required to improve reliability of access.

## Aboriginal cultural heritage

### 9. An Aboriginal Cultural Heritage Management Plan should be prepared

An Aboriginal Cultural Heritage Management Plan (ACHMP) should be prepared in consultation with the registered Aboriginal parties (RAPs) and OEH to ensure that any potential or newly identified Aboriginal sites are appropriately managed and mitigated as required. The ACHMP must be completed and approved prior to any ground surface disturbance works being undertaken.

#### Recommendation 9

OEH recommends that an ACHMP be prepared in consultation with the registered Aboriginal parties and OEH to ensure that any potential or newly identified Aboriginal sites are appropriately managed and mitigated as required. The ACHMP must be completed and approved prior to any ground surface disturbance works being undertaken.

### 10. The project area should be re-surveyed after vegetation removal

OEH has reviewed the supplied documentation with respect to Aboriginal cultural heritage, including the *Wyang Hospital Expansion Aboriginal Heritage Impact Assessment (AHIA)* by McCardle Cultural Heritage Pty Ltd dated 25 January 2019 which forms part of the *Environmental Impact Statement* for an Asset Protection Zone around a hospital service building.

The results of the field survey undertaken with the RAPs were inconclusive as the effective coverage was 0% due to thick underbrush, grass and leaf litter blocking view of the ground surface. Identification of potential Aboriginal sites being present was prevented due to lack of visibility.

OEH recommends that a re-survey of the project area with the RAPs should occur following surface removal of vegetation. Any Aboriginal objects or sites identified during the re-survey will need to be managed in accordance with the protocols for newly identified sites in the ACHMP.

#### Recommendation 10

OEH recommends that a re-survey of the project area with the RAPs should occur following surface removal of vegetation. Any Aboriginal objects or sites identified during the re-survey should be managed in accordance with the protocols for newly identified sites in the ACHMP.