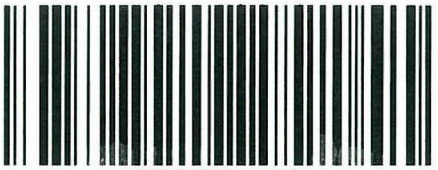
NSW GOVERNMENT | Office of Environment & Heritage

Your ref : MP05_0091
Our ref : GR2549; DOC11/42638
Contact : Biodiversity: Adrian Deville 66402583
Aboriginal Cultural Heritage: Nick Pulver 66598225
Coastal Floodplain Richard Hagley 66270206

Heather Warton
Director
Metropolitan and Regional Projects North
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Joanna Bakapanos



28 OCT 2011.

Dear Mrs Warton

RE: Exhibition of Environmental Assessment, Concept Plan, Bayside Way, Brunswick Heads (MP 05_0091)

I refer to the Environmental Assessment (EA) Report provided for the above proposal received by the Office of Environment and Heritage (OEH) on 14 September 2011.

OEH has reviewed the information provided and has determined that it is able to support the proposal subject to the Department of Planning and Infrastructure (DoPI) seeking the amendments to the draft Statement of Commitments (SoCs), identified in Attachment 1. Attachment 2 contains OEH's assessment of the proposal, including justification for the amendments. Note that these amendments relate to the protection, maintenance and enhancement of biodiversity values of the site, to Aboriginal cultural heritage and to estuary and foreshore management.

It is expected that OEH will be given an opportunity to review the draft Director-General's Environmental Assessment Report for this proposal. If the amendments to the draft SoCs are not included to the satisfaction of OEH, we recommend that they are included as Conditions of Approval, if approval is recommended by DoPI. It should be noted that these amendments are important for OEH's ongoing support of the proposal.

Should there be any other matters, or should your department be in possession of any further information of interest to OEH associated with the proposed development, please contact Adrian Deville on (02) 6640 2583.

Yours sincerely

JON KEATS
Head, Biodiversity Management Unit, North Coast
Environment Protection and Regulation

Department of Planning
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1 NOV 2011
Scanning Room

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PO Box 498, Grafton NSW 2460
NSW Government Offices,
49 Victoria Street, Grafton NSW
Tel: (02) 6640 2500 Fax: (02) 6642 7743
ABN 30 841 387 271
www.environment.nsw.gov.au

ATTACHMENT 1 - RECOMMENDED STATEMENTS OF COMMITMENT AND/OR CONDITIONS OF APPROVAL

OEH recommends that the Department of Planning and Infrastructure seek the following additional statements of commitment from the proponents, or apply the following as conditions of approval as appropriate.

1. Biodiversity Conservation Issues

1. The layout should be redesigned to ensure that key areas of Koala habitat and movement corridors in the north-west of the site, including primary Koala habitat, be maintained and re-established to ensure that direct, indirect and cumulative impacts on Koala are avoided.
2. The layout should be redesigned to increase avoidance of significant tree removal by expanding proposed revegetated/rehabilitated conservation areas at both the east and west of the development area. The proposed retained/rehabilitated/revegetated buffer to the large Swamp Schlerophyll Endangered Ecological Community (EEC) in the eastern portion should be expanded further to the west to incorporate the drainage line to the west and all trees indicated in the EA as being high to very high conservation value trees.
3. The impact of the loss of any significant conservation value trees not avoided through layout redesign (see 2 above) should be calculated and a suitable offset determined.
4. The establishment of a range of nest boxes should be a condition of approval for any hollow bearing trees that cannot justifiably be avoided. These should be matched to an inventory of quantity and habitat qualities of any removed hollows at a minimum 2:1 ratio, located in strategically important connectivity corridors to be established as recommended above and below. This commitment should be incorporated within the proposed Vegetation Management Plan (VMP). The commitment should also be made in the VMP that any suitable hollows approved for removal are to be scattered throughout revegetation / conservation areas to function as potential habitat for ground dwelling fauna (particularly the *Planigale maculata*).
5. The development layout should be redesigned to protect and buffer all environmentally significant areas including threatened species, endangered ecological communities and their habitats with a minimum 50 metre vegetated buffer.
6. Greater attention should be given in the overall layout to biodiversity connectivity within the site:
    i. north-west to south-west (ie Stage 4a corridor in Figure 33) - Further information should be provided before approval regarding the safeguards proposed within the 'environmental lifestyle' lots to ensure the environmental values are maintained in perpetuity, or alternatively, these lots should be rehabilitated and incorporated into an environmental protection zoning and dedicated to Byron Shire Council (subject to their approval) as a protected natural area. These two lots should be further connected and revegetated, incorporating any mapped primary koala habitat (Byron Shire Council mapping) and managed for conservation purposes.
    ii. south-west to south-east - The layout should incorporate a 50 metre vegetated buffer to the property to the south, to be provided from west to east (largely through natural but also assisted regeneration as appropriate),and managed to achieve improved landscape connectivity function for threatened mammals and other fauna known from the site.
7. The layout should be redesigned to avoid impact on Wallum Froglets and their habitat, and include a naturally regenerated vegetated buffer of 50 metres either side of the central drainage channel, maintained in perpetuity in conservation tenure. Alternatively:
    i. clarity should be sought in relation to the consistency of the current proposal and the proposed Wallum Froglet Compensatory Habitat Plan with the need to avoid impacting upon threatened species habitat and the alteration of natural waterways key threatening process; and

ii. adequate alternative offsets should be provided to the satisfaction of OEH, following an assessment of impacts of the proposal using its biometric offset calculation tools (BBAM) or,
iii. an independent assessment be made by a suitably qualified acid frog specialist as to the viability of the Wallum Froglet Compensatory Habitat proposal, with specific reference made to the results of data collected for the Tugun by-pass.

8. The documentation provided should be made consistent and updated to reflect current taxonomic and distributional understanding in regard to the use of the terminology for 'scribbly gum' (ie E. signata, rather than 'racemosa').
9. It should be a condition of approval that the keeping of domestic animals is prohibited by any future residents upon this site, utilizing *a Section 88B instrument under the Conveyancing Act 1919.*
10. A detailed plan for public amenities/facilities proposed near Simpsons Creek should be prepared and assessed in relation to potential impacts upon the foreshore and the Tyagarah Nature Reserve prior to determination of this proposal. Any facilities to be provided should be located away from the edge of the creek, ensuring pedestrian only access.
11. Rehabilitation proposals for the informal track within the road reserve (Concept Plan p122) should extend to all tracks not required to provide pedestrian access to Simpsons Creek within the land zoned for environmental protection and within the proposed adjacent parkland. This is to be reflected in the vegetation management plan.
12. Before approval is considered, more information should be provided about the intended land management regime applicable to the area described as Park 1 and the extent to which it will be rehabilitated/revegetated for conservation purposes.

2. Aboriginal Cultural Heritage Issues

1. The proponent must continue to consult with and involve all the registered local Aboriginal representatives for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.

2. The proponent is to provide fair and reasonable opportunities for the registered Aboriginal stakeholders to monitor any initial ground disturbance works associated with minor works or otherwise in the area identified as the '*Environmental Protection Zone*' associated with the project area. In the event that additional Aboriginal objects are uncovered during the monitoring program, the objects are to be recorded and managed in accordance with the requirements of sections 85A and 89A of the *National Parks and Wildlife Act 1974.*

3. In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and the registered Aboriginal representatives must be contacted to determine the significance of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by OEH) and the management outcome for the site included in the information provided to the AHIMS. The proponent will consult with the Aboriginal community representatives the archaeologist and OEH to develop and implement management strategies for all objects/sites.

4. If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are contacted immediately. No action is to be undertaken until police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact OEH's Enviroline on 131555 and representatives of the local Aboriginal community. No works are to continue until OEH provide written notification to the proponent.

5. All reasonable efforts must be made to avoid impacts to Aboriginal cultural heritage at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the local Aboriginal community and OEH. All sites impacted must have an OEH Aboriginal Site Impact Recording (ASIR) form completed and be submitted to OEH's AHIMS Registrar within 3 months of completion of these works.

6. An Aboriginal Cultural Education Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the local Aboriginal community.

3. Flooding, Coastal Hazard and Estuary Management Issues

1. DoPI must ensure, in conjunction with NPWS/OEH, Marine Parks Authority and Byron Shire Council, that there is appropriate planning for and provision of ongoing mechanisms that will minimise public access impacts to the Simpsons Creek area. Long term maintenance of any approved public access infrastructure that achieves this also needs to be ensured and provided for.

ATTACHMENT 2 – OEH ASSESSMENT OF THE PROPOSAL

1. BIODIVERSITY CONSERVATION ISSUES

General
While acknowledging that this is a concept plan for subdivision, OEH is concerned with the level of important detail to be provided at a later, post approval stage, particularly in terms of the vegetation management plan, Wallum Froglet Compensatory Habitat Plan, 'environmental lifestyle lots', access to the Simpsons Creek (and Tyagarah Nature Reserve) area and the character and management of Park 1.

There also appears to be much scope for further avoidance of impact upon some of the significant ecological values upon this site which would add greatly to its connectivity and thus ecological value in the broader landscape. OEH has accordingly recommended that the layout be redesigned to achieve this. As the majority of the proposed urban footprint is upon threatened species habitat, OEH has recommended in addition to impact avoidance that more adequate mitigation and compensatory offsets also be provided.

Additional recommendations are also made to assist DoPI and the proponents better achieve a maintain/improve biodiversity outcome that would ensure a more ecologically sustainable development approach.

Koala Habitat and Impact Assessment
The ecological consultant has determined that there is no SEPP 44 requirement for a Koala Plan of Management to be prepared, as only 'potential' rather than 'core' Koala habitat exists on the site, under definitions used in that instrument. There has been some acknowledgement of Byron Shire Council mapping of primary and secondary habitat, based on species of food trees present and it is noted that only 5% of primary and 25% of secondary food trees available will be removed by the proposal. There is also emphasis upon the notion of planting at 2:1 offset Koala trees at unspecified locations, but avoidance of impact has not been adequately addressed.

Data from previous surveys on the site indicate at least a 'low level' of koala activity wherever suitable habitat exists, including the presence of scats, with "higher levels of Koala activity ... recorded in vegetated lands to the south" (JWA, EA Vol 1, p15). Scats appear to have been found in most areas of habitat, while data held by Byron Shire Council and Friends of the Koala also indicate several sightings, including in January 2011, at the northern end of the property near Aurana Place.

OEH recommends that more attention should be given to the impact of the proposal on Koala in terms of population ecology, broader declines and the importance of connectivity of remaining habitat within the site and between other areas, with implications for the layout and scale of this proposal. As noted in the recently tabled Senate Environment and Communications References Committee Report (The Koala: saving our national icon, September 2011), it is clear that even remnant habitat is crucial to the long term viability of this vulnerable species in broader local and regional landscapes. This review was undertaken in part to address the limited extent to which existing statutory arrangements protect this nationally declining species and it emphasizes that connectivity between patches of actual and potential habitat are crucial to this species viability in local populations. The severance of movement corridors through urban development can have significant impacts on koala populations, with that report specifically citing the removal of remnant koala food and shelter trees, and importantly noting that individual trees "often form part of a longer chain of trees to additional koala habitat further away" (p53). The report committee also state that "the loss, degradation and fragmentation of koala habitat is the most significant cause of koala population declines and reductions in long-term population viability" in conjunction with

other pressures such as road fatalities and dog attack, and that addressing habitat loss and fragmentation and degradation "is particularly critical to koala populations in Queensland and New South Wales". It further adds that landholders must "act as responsible stewards" and ultimately aim to promote "positive impact which support the wellbeing of the koala" (Ibid, p77).

This site represents some part of the range of Koala locally, serving as a refuge site important in the dispersal of Koala to other 'core areas', however, the EA has not taken adequately into account the impact of the proposal on movement of Koalas across the site which, in a post development scenario, would include fences, roads/vehicles, lights, noise, pools, predatory domestic animals and cumulative food tree losses.

In light of the above information, and noting the very limited consideration of the impact of this proposal upon Koala, OEH recommends that the layout be redesigned to ensure that key areas of Koala habitat and movement corridors be maintained and re-established to ensure that direct, indirect and cumulative impacts on Koala are avoided.

Significant Tree Removal

This proposal seeks to remove a large number of ecologically significant trees, including important hollowing bearing trees and forage trees for Koala and a range of other threatened fauna. Acknowledging that there has been some effort to avoid impacting a proportion of these, many retained trees of conservation significance individually and in the landscape and connectivity context, will become isolated and incrementally lost through urban development and exacerbated edge effects, particularly in the eastern part of the proposed development. Recruitment trees will not be readily generated in the context of an urban footprint, and habitat values of such trees will be heavily compromised by domestic animals, noise, light, fencing and safety considerations, and eventually lost. OEH regards the long term viability of these significant trees in this context as effectively being removed.

It is proposed in the EA that any high conservation value trees that will be removed (146 trees) will be replaced in other re-vegetation areas at a 2:1 ratio (JWA Vol 1, p23). However, no attention has been given in the EA to the impact on habitat values and connectivity arising from the significant time lags in their establishment and to the potential of this to generate significant impact on hollow dependent fauna.

OEH has considered key areas where such significant trees are located and recommends that the layout be redesigned to increase avoidance of tree removal and their habitat features by incorporating them into expanded revegetated/rehabilitated conservation areas both to the east and west of the development area. To achieve this, the proposed retained/rehabilitated/revegetated buffer to the large Swamp Schlerophyll EEC in the eastern portion should be expanded to incorporate the drainage line to the west and all trees indicated in the EA as being high to very high conservation value trees. This recommendation would assist in providing more appropriate buffers to EECs in areas east of the site and increase threatened species habitat and forage security, including that of Koala. As outlined above also, significant trees in the north western part of the property which clearly play some part in supporting Koala in the area should also be incorporated into an expanded and revegetated conservation area rather than urban development.

For any significant conservation value trees not avoided through layout redesign (as above), OEH recommends that the proponents calculate a suitable impact offset using current biometric offset benchmarking tools developed in conjunction with OEH's Biobanking program. The use of the Biobanking Assessment Methodology (BBAM) for assessing an appropriate level of offsetting is consistent with OEH policy. Further information about using BBAM and the Biobanking scheme (as a means of offsetting offsite) can be found at:

- http://www.environment.nsw.gov.au/biobanking/
- http://www.environment.nsw.gov.au/resources/biobanking/08527bbdevguide.pdf
- http://www.environment.nsw.gov.au/resources/biobanking/09476biobankingscience.pdf

OEH recommends that the establishment of a range of nest boxes also be a condition of approval for any hollow bearing trees that cannot justifiably be avoided. These should be matched to an inventory of quantity and habitat qualities of any removed hollows at a minimum 2:1 ratio, located in strategically important connectivity corridors to be established as recommended above and below.

OEH also recommends that commitment is made to the scattering of any suitable hollows that are to be removed, throughout proposed and further recommended revegetation/conservation areas, to function as potential habitat for ground dwelling fauna (particularly the *Planigale maculata*).

Buffers to EECs and Environmentally Sensitive Areas

OEH notes that in the west of the site in particular, several areas of mapped Swamp sclerophyll EEC are either to be filled and developed, or in the case of EEC within the proposed 'environmental lifestyle block', not buffered from the development footprint other than by a 'densely planted screen' and the ring road.

The central drainage area is proposed to function as part of an offset for impacted Swamp Sclerophyll EEC, as part of an 'offset' habitat area for Wallum froglets and as a key part of the stormwater management regime (discussed below). These are to be guided by a future vegetation management plan (VMP) and the Wallum Froglet Compensatory Habitat Plan (WFCHP). These areas are all hydrologically and environmentally sensitive, providing important habitat on the site.

The adjacent property to the south offers environmental significance in terms of threatened species habitat values and connectivity from east to west, between Brunswick and Tyagarah Nature Reserves. As such OEH would expect that it is adequately buffered from the impacts of the proposed development. Avoidance of impacts on the above areas and protection of their current and future environmental values is the most effective means of ensuring that this proposal will maintain and/or improve the environmental values of the site as a whole, particularly if targeted increases in connectivity and reduced edge effects between important but isolated patches are also considered in the design.

OEH recommends that the development layout be redesigned to protect and buffer all environmentally significant areas including threatened species, endangered ecological communities and their habitats. A 50 metre vegetated buffer is considered a suitable benchmark distance for the buffering of environmentally sensitive areas from urban development. This figure is based on the outcomes of a meeting of staff from State agencies in 1996, who in reviewing the Coffs Harbour LEP aimed to develop common standards and approaches to natural resource management issues addressed in local government planning instruments. OEH also notes the work of Boyd et al (2007)[1] which provides recommended minimum buffers between urban development and key environmental assets (p91), with distances derived from recommendations of the North Coast Land Use Conflict Working Group "following a synthesis of existing guidelines and policy". Boyd et al (2007) include the following relevant assets and buffering distances:

Environmental Asset	Minimum Buffering Distance Recommended
Native vegetation/habitat	50m
Ecosystem & wildlife corridors	50m
Wetlands	100m
Minor waterways*	50m

[1] Boyd, B, Fletcher, S., Learmonth, R. and Whitehead, R. (2007). *Living and Working in Rural Areas: A handbook for managing land use conflict issues on the NSW North Coast*, Centre for Coastal Agricultural Landscapes in partnership with Northern Rivers Catchment Management Authority

* Site assessment is necessary as 50m buffer may be inadequate given groundwater, soil type, topography and site factors).

These are considered to represent "a synthesis of existing recommended and best practice minimum buffer distances" (p89), with some recognition that some variations (larger and smaller) may be appropriate in some circumstances, however, 50 metre buffers are the minimum suggested in this report for the various types of environmental assets existing on the site.

Design Layout and Connectivity Issues

Taking the above issues into account, and recognising that the biodiversity values of adjacent properties cannot be considered to provide long term, secure conservation function and value, OEH recommends that greater attention be given in the overall layout to biodiversity connectivity within the site:

iii. north-west to south-west (ie Stage 4a corridor in Figure 33); and
iv. south-west to south-east.

In the case of (iii) above, OEH is uncertain of the arrangements proposed to secure long term protection of the environmental values in the two proposed 'environmental lifestyle' lots. OEH recommends that further information be provided on the safeguards proposed within these 'environmental lifestyle' lots to ensure the environmental values are maintained in perpetuity. In the absence of assurance that this proposed mechanism will be effective, OEH recommends that these lots be incorporated into an environmental protection zoning and dedicated to Byron Shire Council (subject to their approval) as a protected natural area.

Further, taking into account the values of this area in general as part of a Koala movement corridor (noting also the presence of scats) and containing significant high conservation habitat trees, it is recommended that these two lots be further connected and revegetated, incorporating any mapped primary koala habitat (Byron Shire Council mapping) and managed for conservation purposes.

In the case of (iv) above, it is recommended that the layout incorporate a 50 metre vegetated buffer to be provided from west to east, largely through natural but also assisted regeneration as appropriate, to be managed to achieve improved landscape connectivity function for threatened mammals and other fauna known from the site.

Compensatory Wallum Froglet Habitat and Stormwater Management Treatment

OEH recognizes there is need to provide drainage from a residential development site and that the central drainage channel that ultimately drains into Simpsons Creek already exists and provides core habitat for Wallum Froglets. OEH also notes that there is a commitment to the preparation of a Wallum Froglet Compensatory Habitat Plan at a later stage, which will be modeled on a similar plan developed in relation to the Tugun by-pass. Since the detail of the proposed plan is not yet available for assessment, and the results of monitoring from the Tugun model have not been assessed at this time, OEH is concerned that this critical part of the concept plan is largely experimental, with any benefits difficult to assess. This drainage channel is existing threatened species habitat and the proposal is to modify this habitat and (re)create it to serve also as an urban stormwater drainage channel for 167 residential lots. Bearing in mind the above-mentioned associated uncertainties with this proposal, OEH notes that in addition to being threatened species habitat, alteration of natural waterways is a Key Threatening Process to be avoided. OEH recommends that further clarity be sought in relation to the consistency of the current proposal with the need to avoid impacting upon threatened species habitat and this key threatening process.

OEH is not confident that the current Wallum Froglet compensatory habitat plan proposal would be successful in the context of the scale and design of the development layout proposed. Some proposed lots are less than 20 metres from the drainage line. Urban runoff, containing pollutants and nutrients, moving overland and through groundwater filtering is problematic, while the report suggests that "water quality will be the major determinant" of the success of this proposal. Further information would be required to be able to assess the extent to which the specific requirements

of Wallum Froglets will be able to be maintained over the long term and in the context of significant exposure to urban development related edge effects.

Alternatively, if the existing slashing regime was stopped and natural regeneration allowed to a width of 50 metres either side as a buffer to development, significant avoidance of impacts would be produced, while retaining significantly more forage habitat without the need for earth works. If, however, avoidance of these impacts as suggested is considered unjustified, OEH recommends before approval is granted that either:

- adequate alternative offsets are provided to the satisfaction of OEH, following an assessment of impacts of the proposal using its biometric offset calculation tools (BBAM) (as outlined above in regard to the loss of significant trees); or,
- an independent assessment be made by a suitably qualified acid frog specialist as to the viability of the Wallum Froglet Compensatory Habitat proposal, with specific reference made to data collected for the Tugun by-pass.

OEH raises the following additional concerns, which should be addressed by the proponent before concept approval is granted:

- There appears to be no east-west movement opportunities for Wallum Froglets from the central drain, except on the adjacent lot to the south of the subject site on land which may provide no secure long term movement prospects. Recommendations made elsewhere in this submission would help to rectify this concern.
- It is unclear how the proposed cut and fill arrangements will impact on drainage patterns on the site generally and specifically, whether and how environmentally significant areas will be impacted hydrologically. Recommendations made elsewhere in this submission regarding vegetative buffering will assist in reducing the impacts of proposed changes to topography and hydrological regimes across the site.

Eucalyptus racemosa and signata

There is some confusion regarding scientific nomenclature used in relation to scribbly gum. In most mapping provided, the species is referred to as *E. racemosa*, while in the text it is frequently referred to as *E. signata* (in identifying vegetation communities, see p17, 21-25, 28, JWA EA Report Vol 2). These appear to be used interchangeably, despite the fact that there are considerable taxonomic differences with potential statutory implications. In particular, E signata (scribbly gum) is scheduled as a Koala food tree species in the Byron Shire, while E. racemosa (narrow leaved scribbly gum) is not. The latter is considered to be restricted to the lower north coast and mainly the Central Coast region and its location in the Brunswick sub-catchment would be of significance in both taxonomic and in statutory terms. OEH recommends that the documentation provided be made consistent and updated to reflect current taxonomic and distributional understanding.

Domestic animals

It is well understood that the keeping of domestic dogs and cats is in clear conflict with biodiversity protection in general and in particular, in relation to Koala. OEH recommends that it be a condition of approval that the keeping of domestic animals be prohibited by any future residents upon this site, utilizing *a Section 88B instrument under the Conveyancing Act 1919.*

Tyagarah Nature Reserve Access

OEH does not support construction of a footbridge providing access over Simpsons Creek to Tyagarah NR from the proposed subdivision. OEH notes that it is stated in the Concept Plan (p68, p142) that the footbridge and beach access proposal through Tyagarah NR has been abandoned and does not form part of this application.

Provision of public amenities near Simpsons Creek

Public amenities are proposed near Simpsons Creek in the south east corner of the subject land, adjacent to the Nature Reserve. As the information provided in the application is insufficient to assess the potential impacts on the Nature Reserve, OEH recommends that a detailed plan for

these facilities be prepared and assessed prior to determination of this proposal. Any facilities to be provided should be located away from the edge of the creek, ensuring pedestrian only access.

Rehabilitation of informal tracks
OEH recommends that rehabilitation proposals for the informal track within the road reserve (Concept Plan p122) should extend to all tracks not required to provide pedestrian access to Simpsons Creek within the land zoned for environmental protection and within the proposed adjacent parkland. This is to be reflected in the vegetation management plan.

Park 1
OEH is unclear regarding the boundaries of 'Park 1' and the extent to which it will be revegetated. OEH is supportive of the statement that the park is to be dedicated as a 'conservation area' on completion of revegetation works, including those associated with wallum vegetation, wallum froglet habitat, EEC offsets and significant tree offsets (JWA report, Vol 1). However, the triangular area north of the southern boundary, east of the mapped Swamp Sclerophyll EEC, and west of the road reserve is not indicated as being revegetated (in Figure 19). OEH recommends that before approval is considered, more information be provided about the intended land management regime applicable to this area and the extent to which it will be rehabilitated/revegetated.

2. ABORIGINAL CULTURAL HERITAGE ISSUES

OEH has reviewed the documentation provided, including the EA and the '*Cultural Heritage Assessment* to assess the potential impacts of the projects on Aboriginal cultural heritage in accordance with OEH's Aboriginal cultural heritage assessment guidelines and the requirements of Part 6 of the *National Parks and Wildlife Act 1974*, as amended (NPW Act).

OEH acknowledges that the Aboriginal cultural heritage assessment has been undertaken in accordance with its assessment requirements.

OEH has also recommended a number of conditions of approval for Aboriginal cultural heritage that should be reflected in any approval conditions for the project, provided at Attachment 1.

3. FLOODING, COASTAL HAZARD AND ESTUARY MANAGEMENT ISSUES

Flooding
Matters relating to flooding are considered to have been adequately addressed.

Coastal Hazards
The assessment of coastal hazards is considered appropriate and has incorporated the current sea level rise benchmarks from the NSW Sea Level Rise Statement (DECCW, 2009).

Estuary Management
Byron Shire Council has adopted a draft Coastal Zone Management Plan for the Brunswick Estuary. Key matters from the draft plan relevant to the proposed Bayside Brunswick development are:

- Action P1 – *Incorporate a 50-metre wide undeveloped conservation zone alongside all new development and subdivisions adjacent to waterways within the new Byron LEP and/or DCP in accordance with the Mullumbimby and Brunswick Heads Settlement Strategies and the NSW Planning Reforms LEP Standard Template.*
- Action P7 – *Council planners to ensure future residential re-zonings include forested buffer zones between agricultural and new residential lands in Mullumbimby and Bayside Brunswick.*
- Action B4 – *Undertake* bank stabilisation works at Site 15 (adjacent to Bayside Brunswick) on the left bank of Simpsons Creek.

- Future Land Uses in Zone 5 (Simpsons Creek). *The future development (of Bayside Brunswick) may lead to increased stormwater runoff to, and sedimentation of Simpsons Creek. Therefore it is critical that appropriate stormwater controls are implemented on site both during construction and operation of the development.*

The EA proposes public access to Simpsons Creek and beyond through Tyagarah Nature Reserve to South Brunswick Beach. For example: *Access to Simpsons Creek will be facilitated by a perimeter road and car parking. The nature of access facilities is a matter for future negotiation with relevant authorities.* (page 134). OEH considers it critical that any development proposal appropriately considers the management of public access to Simpsons Creek (also discussed under Biodiversity Issues). The riparian zone throughout this area has significant ecological value, is unconsolidated sandy substrate, and in some areas is high (> 5m AHD) and steep. Uncontrolled public access may result in significant bank erosion and slumping. OEH recommends that DoPI ensure, in conjunction with NPWS/OEH, Marine Parks Authority and Byron Shire Council, that there is appropriate planning for and provision of ongoing mechanisms that will minimise public access impacts to the Simpsons Creek area. Long term maintenance of any approved public access infrastructure that achieves this also needs to be ensured and provided for.