



Office of
Environment
& Heritage

DOC16/250373
SSD 7228

Ms Kate McDonald
Team Leader, Industry Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Rebecca Sommer

Dear Ms McDonald

Response to Submissions – Sydney Zoo, Bungarribee Park (SSD 7228)

I refer to your letter received 23 May 2016 by the Office of Environment and Heritage (OEH) seeking comments on the proponent's response to submissions (RTS) for Sydney Zoo (SSD 7228).

OEH has reviewed the documentation provided by the proponent and provides comments on biodiversity at Attachments 1-3.

If you have any queries regarding this matter please contact me on 9995 6868.

Yours sincerely

14/6/16

MARNIE STEWART
A/Senior Team Leader Planning
Greater Sydney Region

ATTACHMENT 1: Office of Environment and Heritage (OEH) comments on the Response to Submissions for Sydney Zoo (SSD 7228)

OEH has reviewed the information provided by the proponent in response to the submissions, including:

- Sydney Zoo Response to Submissions Report dated 12 May 2016;
- Biodiversity Report Addendum;
- Cumberland Plain Woodland (CPW) Planting Strategy; and
- CPW Management Plan Structure.

1. Biodiversity

OEH previously provided comments in relation to biodiversity on 1 December 2015 and 8 February 2016; OEH also met with DPE and the proponent on 21 April 2016 to discuss changes to the design of the overflow car park as well as the ongoing management of CPW on site.

OEH has reviewed the proponent's 'Responses to key issues raised by the OEH' contained in Table 6, Section 4.2 of Response to Submissions report. Comments in this regard are provided at Attachment 2.

2. Offsets

Clarification in relation to the offsets required and the application of the 2014 *NSW Biodiversity Offsets Policy for Major Projects* (Offsets Policy) and *Framework for Biodiversity Assessment* (FBA) to Major Projects is provided in the letter at Attachment 3.

In summary, Major Projects (including this SSD) are assessed in accordance with the Offsets Policy and FBA. The Offsets Policy and FBA describe the only situation where an offset is not required for a Major Project impacting on native vegetation is where the site value score is less than 17, whether or not the vegetation is a critically endangered or endangered ecological community and/or provides habitat for an ecosystem credit species.

Therefore, there is no 0.25ha threshold under the Offsets Policy and FBA and subsequently offsets will be required for the loss of 0.24ha of CPW as a result of this proposal.

ATTACHMENT 2: OEH responses to Response to Submissions Table 6, Section 4.2

OEH comments 8/02/16	Applicant's response 12/05/16	OEH response June 2016
The proposal (as exhibited) is not consistent with the NSW Biodiversity Offsets Policy for Major Projects.	As highlighted in the December 23rd letter Sydney Zoo is of the opinion that the Offsets Policy presents a number of difficulties in its practical application to the current proposal. A meeting with OEH was held on 21 April 2016 to discuss the methodology of the Offsets Policy. It is noted that OEH are currently undertaking a review of the methodology for assessment of applications. Under the amended proposal, it is anticipated that approximately eight credits would potentially be required, however this would be subject to confirmation of the OEH's Policy with respect to the 0.25ha threshold.	A response to these comments is provided in Attachment 3.
OEH has concerns that the Cumberland Plain Woodland (CPW) proposed for retention within a carpark setting may not meet the definition for CPW in perpetuity given the small patch sizes, degree of isolation, large edge to area ratios and the proposed incompatible surrounding land use.	Sydney Zoo has proposed several measures to improve the connectivity of the existing stands of vegetation and also to augment existing stands by planting mid storey and understorey plants. As part of its management and impact avoidance strategy, Sydney Zoo has proposed to fence off and actively manage the existing stands to ensure that they are maintained. This represents an improvement on the current condition of the in-place stands. Refer to the Sydney Zoo CPW Vegetation Management Plan and weed risk management plan for further details on this in Appendix E and Appendix J.	OEH notes that the 'indicative CPW Management Plan Structure' includes discussion of the period of implementation of the plan. OEH understands that the plan is to be implemented in perpetuity.
OEH notes the Landscape Masterplan does not identify any plantings within the retained CPW patches to improve their condition, nor does the duration of the Landscape Masterplan appear to be specified. Given these considerations, any proposal to more directly impact these areas in the future may result in their complete removal and no requirement for offsets.	A planting strategy and planting plan for the CPW areas identified in drawing L17 of the landscape master plan is currently in the process of being developed (noting further detailed design is to occur). This includes species identification, plant spacing and species mix, mulching and soil preparation strategies and suppliers of endemic seeds. A copy of this report is provided in Appendix E. As per discussions held with OEH, a framework for the management of the CPW is provided at Appendix F.	The Planting Strategy appears to largely relate to landscaping areas proposed to be planted with native species throughout the car park and zoo, and not the 'retained' CPW patches. It is expected that once the CPW Plan of Management (POM) is prepared, it will include a planting strategy. Note: the plant species <i>Rhodanthe anthemoides</i> should be removed from the planting schedule as it is not commonly found in CPW, and it should be replaced with a more appropriate species such as <i>Chrysoccephalum apiculatum</i> and/or <i>Senecio hispidulus</i>.
Although the potential for these small patches to degrade further under the current land use is recognised, it is OEH's opinion that the proposed development (as exhibited) would likely result in their demise in the long run and therefore, the 'retained' areas of	This is not consistent with standard ecological framework and the Framework for Biodiversity Assessment, all of which seek avoidance as the number 1 priority, followed by mitigation as number 2, with offsetting only required once these actions have been undertaken. The Sydney Zoo proposal will increase the	OEH notes that the application includes a commitment to implementing the CPW POM but OEH has not been forwarded any evidence of support from the University of Western Sydney and Miru Mittaggar regarding proposed collaborations. OEH

OEH comments 8/02/16	Applicant's response 12/05/16	OEH response June 2016
CPW should be assessed as though they are to be removed. Note the following requirements from the FBA: s. 8.3.1.2 "The proponent must incorporate the principles of avoiding and minimising impacts to biodiversity into the entire life cycle of the Major Project consistently with the guidelines in Subsection 8.3.2". s. 8.4.1.2 "When assessing indirect impacts, the assessor must consider all adverse impacts that can reasonably be predicted to result from the development. The assessor must consider indirect impacts on biodiversity where they are sufficiently related to the development to be considered a consequence of the development".	area of CPW present, and improve its quality. Additionally, a management plan is being prepared (refer to structure in Appendix R) which will ensure the maintenance and rehabilitation of CPW in perpetuity. This approach has been discussed with and approved by OEHL. It should be noted that the proposed car park amendment reduces the impact on the River Flat Eucalypt Forest, and decreases the total area of vegetation to be impacted to less than 0.25ha.	assumes that if the collaborations do not eventuate, that the applicant will still implement the CPW POM.
The letter from Jake Burgess to DPE identifies an "intended collaboration" with universities and Aboriginal agencies with respect to urban bushland regeneration and maintenance. Sydney Zoo wishes to explore whether such a collaboration would provide comfort to OEHL as to the long-term security of the retained patches of CPW. In this regard, and to satisfy the requirements of the FBA, OEHL requires more than an "intended collaboration" and would need to see a specific management plan for the retained patches to demonstrate the measures to be employed to enhance and then manage them as CPW in perpetuity. It would be expected that such a plan would include the identification of: threats resulting from the development (for example, but not limited to, trampling, rubbish dumping, weed invasion); specific measures to be implemented for example, but not limited to, planting of CPW species of local provenance, installation of an access deterrent such as bollard fencing, weed removal program; who will undertake the works (with evidence of their commitment/engagement and qualifications and experience in CPW bush regeneration); and, how the on-going management would be funded. Any approval of the project would require the management plan to be implemented in perpetuity. It should be noted that it may be difficult to demonstrate that the smaller and more isolated patches of CPW proposed for retention could be effectively managed and maintained as CPW in the long-term and therefore, OEHL may still require offsets for these smaller patches identified as FID 2 and FID 5 within the 'Footprint' shapefile.	Refer to Appendices E, J and R for the CPW Management Plan, Planting Strategy and Weed Risk Management Pro-Forma and Appendix H for written confirmation from the Western Sydney University and Muru Mittigar regarding proposed collaborations. Furthermore, the retained patches of CPW will be appropriately managed through the appropriate management plan (refer to the structure in Appendix R), which will address standards of fencing, watering, maintenance and planting.	As above.

OEH comments 8/02/16	Applicant's response 12/05/16	OEH response June 2016
OEH previously raised the concern that the proposal does not satisfy the objective to "improve biodiversity and bushland quality within the precinct", specific to the Bungaribee Precinct (see http://www.westernsydneyparklands.com.au/assets/Resources/PlanSections/Precinct4Bungaribee.pdf), of the Western Sydney Parklands Plan of Management. OEH provided a list of studies to support the opinion that recreation of CPW at a ratio of only 2.1:1 compared to the area being cleared, will lead to a net loss of biodiversity values over time. The letter from Jake Burgess dated 23 December 2015 claims the ratio is sufficient given historical ratios however, no examples were provided.	Following discussion with OEH it is clear that there is no ability to offset on-site, and this comment is now dealt with.	Noted.
As previously advised by OEH in our letter dated 1 December 2015 (see Attachment 2), there may be potential for Biobanking credits to be established and secured by the WSPT in order for the lessee of the site to achieve the desired project outcomes and meet relevant objectives. This would be a matter for the WSPT and Sydney Zoo to investigate.	As discussed further in Section 6.0, Sydney Zoo proposes to modify the design of the car park to remove its footprint from the area of River Flat Eucalypt Forest. The retention of that area therefore removes any need for credits to be sourced based on prior operational policies. Sydney Zoo notes that OEH is currently reviewing the Policy's implementation.	As advised in the attached letter, offsets are required for the 0.24 ha of CPW to be removed.
It is unclear why Plots 1, 7, 8 and 9 have been included in the calculator as HN526 when they are HN528. It is also unclear why Plot 6 has been included in HN526 if it is in a zone mapped as 'exotic'.	The Biodiversity Assessment Report identifies that the HN528 zone is too small for assessment on its own, and thus was merged with the larger area of HN526. This follows standard assessment protocol. It is agreed that the inclusion of Plot 6 in HN526 is an error.	Please note that the merging of PCTs is not standard assessment protocol where the FBA applies. OEH has not received an updated version of the credit calculator, but assumes that these changes have been made.
It is noted that part of the CPW area in the vicinity of Plot 1 that is mapped in the 'footprint' layer as being 'retained' is also mapped in the 'vegetation zones' layer as 'exotic'.	Noted. There is some area which is mapped as exotic to the north and around the edges of this plot which will be kept. This is a protective buffer for the in place CPW and Sydney Zoo will seek to improve the viability of this stand, which will also be planted with species native to CPW.	Noted.
Landscape Masterplan Part 15 (DWG L22 Rev A) is not consistent with the GIS shapefile for 'retained' land: the plan shows 'asphalt car park' over the northern part of the largest 'retained' patch of CPW. However, part of this area is also mapped as 'exotic'; see above. Please clarify the extent of land to be 'retained'.	Drawing L22 was illustrative as a demonstration of car park zones, it inaccurately shows impact on the patch referenced that is different from the actual plans. This has been amended. The area contains both exotic and CW species as there is a construction buffer established around the CPW to assist in its preservation.	Noted.
OEH notes that surveys were undertaken at a suitable time of year for all the flora species except potentially <i>Pimelea spicata</i>. <i>Pspicata</i> can appear any time of year but mostly in summer, and can be difficult to detect when not in flower. As no surveys	According to the 'Survey time matrix' from the assessment tool and Threatened Species Profile Database, <i>Pimelea spicata</i> can be surveyed for at any time of year (Jan - Dec). Survey did not detect this species, and the habitat was disturbed with little understorey,	Noted.

OEH comments 8/02/16	Applicant's response 12/05/16	OEH response June 2016
were done in summer, what further justification can be provided to be certain the species does not occur on site? Were any reference populations known to be flowering at the time of survey?	so there would have been a high likelihood of detecting this species, if present.	
OEH notes that no camps of Grey-headed Flying-fox or maternity caves of the Little Bentwing-bat were recorded on site. The BAR does state however, that up to two trees with hollows suitable for microbats would be removed. Tree hollows provide potential roosting habitat for the Little Bentwingbat. Given this, and the SEARs' requirement to address s.9.2 of the FBA for impacts to Little Bentwing-bat roost sites, OEH requires evidence that the species is unlikely to roost on site (by undertaking targeted surveys for the species; to date, only habitat assessment has been undertaken) and/or s.9.2 of the FBA is to be addressed.	Those species are not predicted by the tool (either as a ecosystem credit species or a species credit species). Therefore, no survey is required according to the assessment methodology.	Noted.

ATTACHMENT 3: Letter to Steven Ward - Clarification on application of 0.25 ha for vegetation zones and offsets for Major Projects



Office of
Environment
& Heritage

DOC16/205918

Dr Steven Ward
Infrastructure Sector Lead
Associate/Senior Environmental Planner
Eco Logical Australia Pty Ltd
PO Box Q1082
QUEEN VICTORIA BUILDING NSW 1230


Dear ~~Dr~~ Ward

RE: Clarification on application of 0.25 ha for vegetation zones and offsets for Major Projects

I refer to your email to John Seidel dated 27 April 2016 seeking clarification from the Office of Environment and Heritage (OEH) regarding the application of a 0.25 ha threshold for vegetation zones and biodiversity offsets for Major Projects. OEH understands that you are seeking clarification with respect to the proposed Sydney Zoo (SSD 7228) as well as more generally for all Major Projects.

As you point out in your email, and as recognised by OEH, the 2009 *BioBanking Assessment Methodology and Credit Calculator: Operational Manual* (the 2009 BBAM Operational Manual) does state "the minimum size of a vegetation zone is 0.25 ha". This Manual goes on to state, "If the total area of native vegetation on the development site is an area of less than 0.25 ha, then the assessor should consider whether the methodology is a suitable option for assessing the biodiversity values of the site". It is important to note that the latter statement does not exclude areas less than 0.25 ha from being assessed under BBAM. This is further supported by the fact that the *Biodiversity Banking Assessment Methodology* itself, both BBAM 2008 and BBAM 2014, does not include any reference to a 0.25 ha threshold.

It is also important to note that the 2009 BBAM Operational Manual was prepared before the release of additional assessment methodologies, such as the *Biodiversity Certification Assessment Methodology* (BCAM 2011) and the *Framework for Biodiversity Assessment* (FBA 2014) and was written in the context of the BioBanking scheme only. In stating, "If the total area of native vegetation on the development site is an area of less than 0.25 ha, then the assessor should consider whether the methodology is a suitable option for assessing the biodiversity values of the site", the 2009 BBAM Operational Manual encourages the reader to consider whether any other suitable assessment options are available for such small impacts, such as the Assessment of Significance method.

Notwithstanding the above, the 2009 *BBAM and Credit Calculator Operational Manual* does not apply to the assessment of Major Projects. Major Projects are only assessed in accordance with the 2014 *NSW Biodiversity Offsets Policy for Major Projects* and FBA (unless the Secretary's Environmental Assessment Requirements state otherwise). As previously advised, and as agreed to in your email, neither the Offsets Policy nor FBA discuss a 0.25 ha threshold. In fact, the Offsets Policy and FBA

(FBA as amended by the 2015 *NSW Biodiversity Offsets Policy for Major Projects: Practice Note - Offset threshold for vegetation below a certain condition level*) describes the only situation where an offset is not required for a Major Project impacting on native vegetation as being where the site value score is less than 17, whether or not the vegetation is a critically endangered or endangered ecological community and/or provides habitat for an ecosystem credit species.

In February 2016, OEH released the *Credit Calculator for Major Projects and BioBanking Operational Manual* (<http://www.environment.nsw.gov.au/resources/biobanking/160096BBCC.pdf>). The 2016 'Credit Calculator' Operational Manual, unlike the 2009 Operational Manual, applies to both Major Projects and BioBanking and supersedes the 2009 Operational Manual. The 2016 'Credit Calculator' Operational Manual does not discuss a 0.25 ha threshold and the Credit Calculator itself allows vegetation zones less than 0.25 ha to be created.

As you would be aware, a complimentary operational manual to the 2016 'Credit Calculator' Operational Manual is currently being prepared to help Accredited Assessors interpret and apply the FBA and BioBanking methodologies in the field. The forthcoming Operational Manual for Major Projects and BioBanking field assessment does not include a 0.25 ha threshold for when an offset is required. The forthcoming operational manual will be available to all OEH regions and Accredited Assessors, enabling consistency in the application of the methodologies.

Therefore, in response to your main question of whether a 0.25 ha threshold still applies to the FBA/Major Projects, the answer is that a 0.25 ha threshold does not apply to the FBA/Major Projects. This advice has been confirmed by OEH's Environmental Programs Branch.

In response to your statement that the 0.25 ha threshold issue only emerged after the recent Sydney Zoo design changes, please note OEH raised the issue of merging the Cumberland Plain Woodland with the River-flat Eucalypt Forest during the exhibition period, before the design was amended (see OEH letter to the Department of Planning and Environment (DPE) dated 8 February 2016).

With respect to your questions regarding vegetation mapping and collection of plot data, the following advice is provided:

- As per previous written advice to Eco Logical Australia (ELA), in respect of applications for a Major Project, BioBanking Statement or Agreement, OEH requires that any vegetation that is a threatened ecological community be shown separately on a map of vegetation zones.
- The only instance in which a small vegetation zone may be combined with a larger neighbouring zone for a Major Project is at the offsetting stage (not assessment stage) and where it is in accordance with the FBA's offsetting rules (s10.5).
- A standard plot/transect is 0.1 ha and will fit within a 0.25 ha area depending on the shape of the polygon. Where a standard plot/transect does not fit, a linear plot may be used.
- Where there are dis-contiguous smaller polygons that combine to create the vegetation zone, the largest polygon should be surveyed. In this case, only the area of the polygon will contribute to the plot/transect and the site value condition score for the zone. Alternatively, plot/transect data that is collected on land outside the impact area but within the subject site are acceptable approaches.

In regard the Sydney Zoo proposal, OEH appreciates that ELA and the zoo project team sought to meet with OEH and DPE in the early planning stages of the proposed development. OEH would continue to welcome any joint meetings to finalise the Sydney Zoo proposal as expeditiously as possible. However, I hope that you appreciate our ongoing position that any 'transitional arrangements' associated with the Offset policy/FBA are designed to address technical or administrative issues, rather than to negotiate changes to the methodology to suit the circumstances of individual developments.

Thank you for seeking to clarify the issue of a 0.25 ha threshold with OEH. Your feedback has been helpful in improving the clarity of the forthcoming Operational Manual for Major Projects and BioBanking field assessment.

If you wish to discuss this matter further please contact David Trewin, Regional Manager Greater Sydney, on 8837 6096 or at David.Trewin@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Tom Grosskopf', written in a cursive style.

TOM GROSSKOPF
Director, Metro Branch
Regional Operations