

Appendix A:
Report Prepared by Travers Bushfire and Ecology,
dated 4 February 2011

Our ref: A11003

4th February 2011

GSA Planning
95 Paddington Street
PADDINGTON NSW 2000

Attention: Mr Gary Shiels

Dear Gary,

Re: Proposed Subdivision at Salamander Way, Salamander Bay

I have been requested by *GSA Planning* to provide advice in respect of a proposed subdivision at Salamander Way Salamander Bay.

I have reviewed the proposed development plans, read ecological advice provided by *Gary Worth Project Consulting* and read submissions received from interested community groups.

In order to respond to the brief I have undertaken a site inspection with my colleague Lindsay Holmes on Monday afternoon January 31st 2011. I subsequently walked the site and then I drove around the external fringes of the Mambo Wetland and adjoining residential areas.

This letter acts to respond to the brief raised in your email of Friday, 28th January, 2011. The email required the following six (6) points to be considered.

1. Undertake an ecological reconnaissance the koala habitat, potential tree loss and the position of the proposed road.
2. Consideration of the key points raised in the Mambo Wanda Wetlands Reserves & Landcare 355(b) Committee (Mambo Wetlands Committee) and the Tomaree Ratepayers and Residents Association (TRRA) submissions against the key points in the applicants Flora and Fauna Report.
3. In light of the above, the key points would be:
 - a. The value of proposed Lots 4,5,6 as koala habitat and part of the wetlands and/or SEPP 14 wetlands;
 - b. The likely loss of koala feed trees (whether 6 or more trees will be lost)
 - c. The value of the proposed 300 koala habitat tube stock as a food source around the periphery of the proposed road;
 - d. The impact of the proposed road and stormwater system on the koala habitat and wetlands.
 - e. Is the proposed offset provision of habitat on the opposite side of Salamander Way fair and reasonable or is it double counting?
4. Is a further seven (7) part test required or is the information available considered to be adequate?
5. Advise whether or not the concession to the Koala Plan of Management by Council's Coordinator of Natural Resources is well founded and should be supported.
6. Do any of the above ecological issues need to be resolved? If so, are they capable of minor design refinements or would they be fatal to the proposed subdivision application in its present form?

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Background

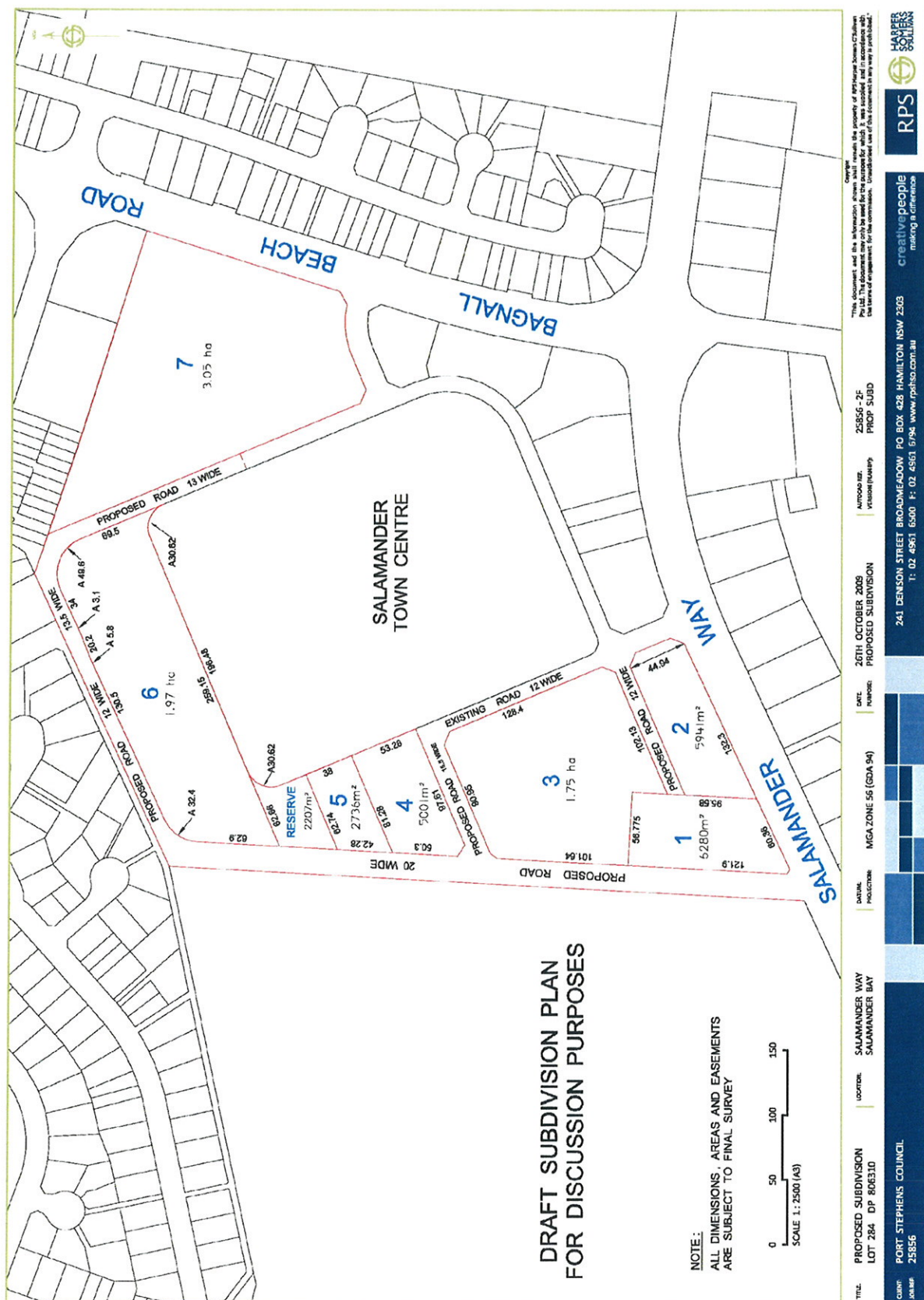
It is proposed that a subdivision and drainage works take place within Lot 284 DP 806310 Salamander Way, Salamander Bay. The site consists of approximately 12 ha of land in a 'U' shape adjacent to the western, northern and eastern sides of the Salamander Bay Commercial centre and associated car parking. The land is zoned 3A Commercial and presently contains a Library, Community Centre and Day Care Centre. These cover only a small portion of the land and the remainder is undeveloped.

The proposal shall re-contour the site by using the sand dune along the northern part of the Lot in a cut and fill operation. This activity will result in the removal of almost all vegetation occurring within the site. Figure 1 depicts the study area and surrounding landscapes whilst Figure 2 shows the current subdivision proposal upon which our assessment will be made.



Figure 1 – Study Area

Vegetation within the western portion of the subject site has been described as Swamp Forest, commensurate with the final determinations of the scientific committee for Swamp Sclerophyll Forest on Coastal Floodplains, an endangered ecological community (EEC) under state legislation. Vegetation within the northern portion of the subject site, eastern portion and a small area in the south-east has been described as Coastal Sand Woodland (not an EEC).



No threatened flora species have been observed within the subject site despite any potential habitat.

Two threatened fauna species have been recorded, those being Koala and Wallum Froglet. A small number of calls consistent with that of the Wallum Froglet were heard calling from within the area of Swamp Forest to the north and west of the library during fieldwork. A number of calls were also heard originating from a small narrow drainage line to the south-west of the library. Outside the site the Wallum Froglet was heard calling from within the Mambo Wetland within a narrow drainage line running along the southern end of the western boundary. Calls were also heard originating from within an area of *Lepironia* Swamp located adjacent to the far south-western corner of the site.

An individual Koala was observed during the original flora and fauna survey within the west of the site just to the north of the library car park on the fringe of the wetter area of Swamp Sclerophyll Forest. This Koala was feeding within a *Eucalyptus robusta* (Swamp Mahogany), which is listed as a Preferred Koala Feed Tree Species under the Port Stephens Comprehensive Plan of Management. A number of recent Koala scats were also found to be present under specimens of Swamp Mahogany in the west of the site around the periphery of the wetter area of Swamp Forest and *E. tereticornis* (Forest Red Gum) within the library car park. No evidence of Koalas was found in the eastern portion of the site.

Given the sensitivity of the area and proximity to a SEPP 14 wetland, there have been objections raised against the development proposal by particular committees. This letter seeks to provide our independent opinion based upon the information at hand and after a site inspection which was conducted on the 31st January, 2011.

1. Undertake an ecological reconnaissance the koala habitat, potential tree loss and the position of the proposed road.

Response:

John Travers and Lindsay Holmes undertook a site inspection on the 31st January, 2011 to get an understanding and appreciation of the natural environment contained within the development site and that immediately adjacent.

It appears that the position of the outermost western road will remove only *Melaleuca quinquenervia* trees however there may be 1 or 2 *Eucalyptus robusta* (Swamp Mahogany) trees lost at the far northern end of the road in Lot 6. *Eucalyptus robusta* trees were very seldom throughout much of the eastern portion except for around the northern boundary of the library car park and in the far north-west of the subject site adjacent to an existing cleared tree which delineates between the Swamp Forest and Coastal Sandy Woodland vegetation communities. There was also a small population of young trees on the sandy dune area in the north-eastern portion of the subject site. *Eucalyptus tereticornis* (Forest Red Gum) was the other Koala feed tree that was observed on site, however this only occurred as young trees (planted) within the library car park.

The vegetation is young, not likely to be more than 30 years old, and the Koala trees are no taller than 15 metres.

We believe that the Koala habitat is therefore poor because of the very limited amount of non-remnant feed trees, however the value is still of high importance because of the expanse of native vegetation in the locality including the wetland area to the west is large and that Koalas are recorded to utilise the site. This is evidenced from the report by RPS finding one (1) Koala within the area just to the north of the library car park as well as scats in the same locality.

2. Consideration of the key points raised in the Mambo Wanda Wetlands Reserves & Landcare 355(b) Committee (Mambo Wetlands Committee) and the Tomaree Ratepayers and Residents Association (TRRA) submissions against the key points in the applicants Flora and Fauna Report.

Response

A) MAMBO WANDA WETLANDS RESERVES & LANDCARE 355(b) COMMITTEE

- A minimum of 50 metres must be maintained between the Mambo Wetland Reserve and the proposed subdivision. The proposed road to the western side of the subdivision clearly does not conform to these requirements.

This is correct. A minimum of 50 metres separation to a SEPP 14 wetland must be adhered to under the current legislation. Development within parts of proposed lots 3, 4, 5 & 6 could encroach on the buffer area.

- The proposed removal of approximately 4.2 ha of Swamp Sclerophyll Forest would compromise the strategies aimed to help recover the EEC and therefore does not comply with the PAS (Priority Action Statements).

The proposed development would remove a large chunk of EEC in the locality and could potentially compromise a local extinction, contrary to the beliefs of the 7 part test of significance.

- The compensatory offset is not adequate as it is already community land and being on the opposite side of a busy road would not facilitate the safe movement of Koalas and other fauna from Mambo Wetlands.

Travers bushfire & ecology agrees that the compensatory offset would not comply with all 13 points on the checklist of the *principle of the use of biodiversity offsetting in NSW* (see Appendix 1 attached). Whilst the proposed offset contains similar habitat attributes, is of a good size ratio for offsetting, it does not meet all criteria.

For example DECCW advises that a biodiversity offset *"is one or more appropriate actions that are put in place to counterbalance specific impacts on biodiversity. Appropriate actions are long-term management activities to improve biodiversity conservation. This can include legal protection of land to ensure security of management actions and remove threats"*. (source: DECCW website 2011).

They go onto say

"The appropriateness of biodiversity offsets will need to be determined in relation to the circumstances and the standard required by legislation for which the offset is proposed. For example, to obtain biodiversity certification under the Threatened Species Conservation Act 1995, the required standard is to improve or maintain biodiversity values. Clearing or development proposed in certain areas, such as high conservation significance communities in good condition, will not meet the improve or maintain requirements under this Act".

Therefore we believe that the proposal would not meet the Improve and or maintain requirements.

B) TRRA SUBMISSION

- No orchid survey has been undertaken.

Survey for *Cryptostylis hunteriana* was undertaken during the known flowering period on January 12th, 2010. Survey however undertaken in April would not be effective in determining the presence or absence of locally occurring *Diuris* species and *Corybas dowlingii* which flower between July and September. In our opinion the potential for this species to be found on site would be low.

- Fauna survey has largely been limited to the boundary of the site and not within swampy areas. We recognise that this would be very difficult due to the moist conditions and the density of vegetation.

Agreed, there appears to be a deficiency of fauna survey, and possibly flora survey within the Swamp Forest that is subject to more inundation (proposed lots 4, 5 and reserve). Fauna survey is highly restrictive for arboreal trapping given consideration to the potential for Squirrel Glider to occur. Trapping would require at least 20 Type B (Arboreal) traps over four (4) nights within the angophora forest in the wetland, plus the proposed road alignment, lots 1-5, the proposed reserve and also within the western 100m of lot 6.

- The flora and fauna study has underestimated the extent of EEC and is inconsistent in the assessment of the size and quality.

The 7 part test assumed a 3 ha loss whilst 4.2 ha was found to occur. We feel that the assessment should have used the 4.2 ha loss. The extent of mapped EEC from field investigations is valid in our opinion although we have not undertaken flora quadrat analysis to validate this, only a field inspection.

- The development will impact the SEPP 14 area.

Agreed. The western perimeter road clearly intrudes on the 50 metre buffer to the wetland. The proposal will likely increase edge effects (rubbish dumping, weeds, etc.). In isolation of any known water engineering solutions one must take the view that there will be indirect impacts at least.

- The proposal is not compliant with the Port Stephens Council Koala Plan of Management (PSCKPOM) in that it doesn't seek to minimise impacts nor provide suitable buffers to the preferred koala habitat.

The impact of development and loss of feed trees will be detrimental to the Koala(s) utilising the site as the preferred koala habitat will be severely fragmented and further isolated to a very tiny remnant, possibly not suitable for future use given the humanised landscape surrounding (increased human visitation and infrastructure). Retention of trees within Lots 4, 5 and the reserve, along with suitable mitigation measures is deemed appropriate. Council should not waive the provisions of the PSCKPOM for this development. Suggested landscaping to plant 300 tube-stock feed trees is not a suitable mitigation measure as these trees would take in the order of 10 years to reach a certain maturity for use by the Koala. Most importantly these trees would be a strip along the road edge and therefore form a narrow lineage. This approach does not provide a vegetated 'patch' with its inherent protection from passing vehicles, noise and predatory animals such as dogs. The area proposed for planting being adjacent to a proposed road and therefore luring the Koala to this planted landscape could be detrimental to its safety and well-being.

- The proposal is not consistent with matters needing to be addressed under SEPP 71 – Coastal Protection.

Lots 4 & 5 are clearly within a depressional area of the site with natural soil moisture levels. The western area of Lots 1, 2 & 3 appear to be relatively natural however the eastern portion may have some fill (development location of the library and childcare centre). Lot 6 and Lot 7 have been filled due to the development of the Town Centre.

Development of in particular Lots 4 & 5 would reduce the functioning of the bushland as a wildlife corridor by restricting the width outside of the SEPP 14 wetland that some animals cannot utilise (given the presence of water).

The levels of Lot 4, 5 & reserve are around the elevation of 5m. Council typically map flood prone areas to 2.5m with an extension to 3.6m given sea level rise. Notwithstanding this, both lots are clearly waterlogged on occasion given the high presence of fern and typical wetland species indicating either the presence of water or an extremely high water table.

The proposal will exacerbate stormwater issues to the SEPP 14 wetland adjacent should Lots 4 & 5 be filled and developed (and reserve for drainage purposes), therefore would be inconsistent with the matters of consideration under SEPP 71.

- The local effect of the proposal to remove the EEC is not clearly defined.

The local extent of EEC has not been mentioned in the SEE by RPS (2009). There is a lack of information to determine the significance of the impact on the local extent and the *precautionary principle* should be considered in this case. The EEC is somewhat isolated from other patches of EEC in the local area. The proposal will effectively remove the entire patch of EEC and thus could lead to local extinction. More evidence to support or negate this issue needs to be addressed. We are aware of the extent of EEC within the proposed offset lands to the south-west of the development site.

3. In light of the above, the key points would be:

- a. **The value of proposed Lots 4, 5, 6 as Koala habitat and part of the wetlands and/or SEPP 14 wetlands;**

Response:

The value of Lot 4 in respect to Koala is indicated not just by the presence of suitable habitat containing the presence of feed trees but most importantly the recorded presence of Koala and use of feed trees present within this lot. The remaining western portion of Lot 4 provides natural connectivity and subsequent appropriate access to these feed trees.

Lot 5 is located wholly within 'Preferred Koala Habitat' mapped by Port Stephens Council. This lot is mapped to provide the majority of linkage to habitat to the west of the subject site (see Figure 13 of the SEE). The actual value of Lot 5 for Koala is simply to provide direct natural access to available feed trees to the immediate north and south. Lot 5 within the proposed subdivision plan dated 22nd July 2009 contains no Koala feed trees; trees present are predominantly Broad-leaved paperbark (*Melaleuca quinquenervia*) with stems less than 15cm DBH.

Lot 6 contains approximately twelve (12) Swamp Mahogany trees mostly in the eastern portions of this lot. These trees are located within regrowth and opportunistic heath vegetation that is not considered to provide much value as Koala habitat. This is given the highly disturbed nature of the previous landfill that is located to the north of the Salamander Town Centre likely from the construction of this shopping centre and car parking. The Swamp Mahogany trees present are therefore more isolated from connective woodland or forest structure associated with Koala. It is believed that Koala activity was not recorded within this Lot.

The value of the wetlands is difficult to establish as almost no information is available to review. However the site is habitat for the Wallum Froglet and as such requires due consideration given habitat removal would force the species westwards.

b. The likely loss of koala feed trees (whether 6 or more trees will be lost)

Response:

The Figure provided in Appendix G of the SEE prepared by RPS (2009) shows a subdivision plan dated 22nd July 2009, with the number of Swamp Mahogany trees to be removed totalling twelve (12) trees. This figure however only provides a view of the western portions of the subject site. A further (approximately) twelve (12) Swamp Mahogany trees are present predominantly within the north-eastern portion of the site within the proposed Lot 6 as shown on Figure 6 of the SEE.

As we are aware however, this was a concept plan only, not the one we should be assessing. Figure 2 as inserted in this correspondence and dated 26th October 2009 is less likely to conserve those feed trees at the northern end of the library car park within proposed lots 3 and 4 and the proposed road between these. Whilst a reserve is indicated on this plan it is believed that this would be cleared in order to act as a drainage reserve. Thus all Swamp Mahogany will likely be removed for the recent proposal totalling approximately forty-five (45) trees. This does not include the approximately twenty (20) planted *Eucalyptus tereticornis* within the centre of the existing library car park, which whilst not naturally occurring, are also a primary Koala feed tree. One of these trees has had recorded use by Koala; these would not otherwise require mention. Thus a total of sixty five (65) Koala feed trees would be removed.

As explained earlier the planted tube stock should not be a replacement for loss of patch habitat and older trees.

The concept plan to retain feed trees is obviously more appropriate for Koala feed tree retention, however there is still no 50 metre buffer to a koala habitat area which should be addressed under a Koala Plan of Management.

c. The value of the proposed 300 koala habitat tube stock as a food source around the periphery of the proposed road;

Response:

Given that the existing Koala is utilising linear Swamp Mahogany trees along the edge of the library car park, the provision of Koala habitat along the western edge of the proposed road would be considered to provide habitat of likely future value and use. It should however be recognised that this road will have significantly higher traffic and subsequent potential for road injury to Koala. Fencing along the road edge would ensure the safety of Koalas but would alternatively exclude Koalas from the more mature Swamp Mahoganies located adjacent to the library car park if they were to be retained.

Furthermore, *Eucalypt* species should be planted as tube stock and not as small trees to ensure their success rate for establishment. This would create a delay of at least ten years before trees would be of a size to be utilised by Koala, which is beyond half the lifespan of a Koala. Koalas also tend to make preference and higher use of the larger more mature trees within home ranges. Therefore this is only a long-term benefit and should not be factored into the balance between habitat removal and retention for local Koalas at this stage.

It is recognised that the existing Swamp Mahoganies whilst being mature are not old remnant trees but the result of regrowth. Nonetheless, they appear to provide the only primary Koala feed trees in the immediate area, as neighbouring lands to the west out to approximately 500m do not appear to contain Swamp Mahogany. The fencing option, as described above would therefore eliminate accessibility to the Swamp Mahogany habitat in the short to medium term which would be an unsuitable outcome.

d. The impact of the proposed road and stormwater system on the koala habitat and wetlands.

Response:

As mentioned above, the proposed road will cause a barrier effect causing a high degree of isolation of currently utilised habitat by Koala. This is not mitigated on-site by implementing speed restrictions or tree planting. The presence of this proposed road should ideally eliminate consideration of valuable Koala habitat that exists to the east. Whilst some low speed roads may not hinder movement of Koalas between habitat areas, it should be recognised that the proposed retention of Swamp Mahoganies and a small reserve to the east would be small in size, highly fragmented and surrounded by development.

e. Is the proposed offset provision of habitat on the opposite side of Salamander Way fair and reasonable or is it double counting?

Response:

In respect to Koala, the proposed offset provision will lock-up a higher area of suitable Koala habitat likely containing much more Swamp Mahogany than exists within the subject site. This would however need to be verified by ground truthing. The offset area also has higher connective values for local movement. Whether this area is currently utilised by Koala would also require further investigation; current desktop analysis assumes this to be of value to the local Koala population.

Should the offset be considered for the individuals using Mambo wetlands then it is the case that the offset is located in a spot whereby Koala movement is significantly hindered due to vehicle traffic along Salamander Way.

Notwithstanding that the habitat within the offset area is currently available to Koala. Therefore the proposal would result in a net loss of local Koala habitat.

Thus the offset calculation should be regarded as double counting.

4. Is a further seven (7) part test required or is the information available considered to be adequate?

Response

The existing 7 part test of significance does not assess the EEC adequately as it fails to deal with the presence in the locality. In other words we feel that the EEC should be considered in light of the local presence or not of similar vegetative systems and how the loss of this EEC would impact the local occurrence.

Specific flora species have not been field assessed during their flowering period thus limiting the validity of arguments within the 7 part test of significance. Those with cryptic flowering periods need to be surveyed at particular times in order to make a valued judgement. In this instance, further field survey is required between July and September.

We therefore form the view that the 7 part test of significance requires further consideration in order to attend to the missing information.

5. Advise whether or not the concession to the Koala Plan of Management (KPOM) by Council's Coordinator of Natural Resources is well founded and should be supported.

Response

In respect of the memorandum provided by Port Stephens Coordinator of Natural Resources dated June 11 2010 we are of the view that the waiver provisions have not been assessed and responded to appropriately such that the waiver provisions may be enacted.

The *performance criteria* for the KPOM requires several factors to be considered for all development that contain Preferred or Supplementary Habitat, Habitat Buffers or Habitat Linking Areas (excluding DA's for agricultural activities) – see Appendix 2 for details and response to the criteria.

In particular the waiver provisions can only be used where the following four (4) points are able to be served. For example the KPOM states:

Council may waive the provisions of a), b) and c) (below and over the page) of these criteria only for the purposes of establishing a building envelope and associated works, and only if the proponent can demonstrate:

- 1. That the building envelope and associated works including fire fuel reduction zones cannot be located in such a way that would avoid the removal of native vegetation within Preferred or Supplementary Koala Habitat, Habitat Buffers, or Habitat Linking Areas, or removal of preferred koala food trees.*
- 2. That the location of the building envelope and associated works minimises the need to remove vegetation as per 1 above.*
- 3. That, in the case of subdivisions, they are designed in such a way as to retain and enhance koala habitat on the site and are consistent with the objectives of this appendix, and*
- 4. That koala survey methods (as per the Guidelines for Koala Habitat Assessment in Appendix 6) have been used to determine the most appropriate location for the*

building envelope and associated works (so as to minimise the impact on koala habitat and any koala populations that might occur on the site).

Given the development is a subdivision criteria # 3 requires that subdivisions be designed 'in such a way as to retain and enhance koala habitat on the site and are consistent with the objectives of this appendix'.

This has not been done as habitat will be lost, other habitat will be fragmented and proposed retained habitat in the form of planted trees will not offer 'patch' protection. In addition habitat on site will not be enhanced. The planting of Koala feeds trees in a linear line could not be regarded as being an enhancement of koala habitat.

The provision of Koala habitat on the other side of Salamander Way should not be regarded as enhancing habitat as it exists already notwithstanding it is probably the best opportunity to access more extensive local to regional habitat. However the busy Salamander Way makes the proposal a poor solution given the lack of scientific rigor applied to the Koala population understanding within the Mambo Wetland.

In regards to the performance criteria identified within the KPOM the assessment does not adequately address those detailed requirements.

6. Do any of the above ecological issues need to be resolved? If so, are they capable of minor design refinements or would they be fatal to the proposed subdivision application in its present form?

Response

Flora survey required – Flora survey in July to September is required to determine the presence or absence of cryptic orchids. A biometric style assessment should be applied upon the Swamp Forest vegetation to determine vegetation quality and condition. It is possible that there may be some portions of *low quality* under this assessment which could be effectively removed without offsetting requirements, although given our observations of relatively good canopy cover, this is unlikely to find *low quality* remnants.

Fauna survey required - It would appear that the *berm* area adjacent to the western boundary containing mostly *Angophora costata* (Smooth-barked Apple) trees may contain hollows suitable for microbats and small mammals. These larger trees may also provide suitable roosting habitat for large forest owls which may foraging around the subject site. No hollow-bearing trees have been located in previous surveys within the subject site however those larger trees immediately adjacent have not been assessed. This is a downfall of the previous assessment and should be rectified. Our site inspection revealed some old trees with apparent small hollows suitable for microbats.

In regards to Koala occupation of the Mambo Wetland it is necessary that a Koala expert review the population 'distribution and abundance' make an informed determination on what level of impact could be sustainable for any possible development.

In regard to minor refinements of the plan it is the case that minor amendments would not reduce the impacts to less than significant. Should the plan be amended in a substantial manner then the impact may not be significant. In this regard amendments would need to involve the following;

- No development with proposed lots 4 & 5 and the proposed reserve.

- Elimination of the proposed road alignment west of lots 4 & 5.
- Retention of Koala feed trees around the library car park and retention of all feed trees within the north-western corner of the subject site within lot 6. The area should be delineated by Koala fencing to protect the individual/population utilising the site.

Notwithstanding this we believe development can occur within;

- Lots 1 & 3 despite the presence of an EEC. We believe that this landscape is not significant due to its young age and past clearing. However we recommend strategies to retain some stands of habitat (Melaleuca and Banksia) as a feed resource for local fauna as being beneficial.
- Lot 2 as it not affected by EEC vegetation.
- Lot 6 subject to the protection of the far western portion of remnant Swamp Forest and Koala feed trees.
- Lot 7 appear unconstrained in our opinion. The presence of Melaleuca and Swamp Mahoganies within these lots do not provide a safe patch for Koala use given the narrow pinch point between lots 6 & 7; traffic on the proposed road alignment between lots 6 & 7 and the incidence of uncontrolled dogs in this area.

We also believe that the proposed road alignment is acceptable in the southern half of the site (on the western boundary to Lots 1 and 3) subject to any road not protruding within the 50 metre buffer to Councils mapped SEPP 14 wetland. We believe that this road would be detrimental if constructed in the area generally north of Lot 3. We are not able to ascertain to the exact location of the SEPP 14 boundary due to mapping non availability / accuracy of its boundaries.

In regards to offsetting calculations for the loss of habitat we believe the following should be considered;

- Lots 1, 2 & 3 should be compensated for habitat loss.
- Lots 6 & 7 (given past clearing history) need not be compensated subject to the remnant swamp forest in the far west of Lot 6 being retained.
- The proposed road alignments would need to be compensated.

Conclusion

In view of the above we believe the site requires further ecological assessment to satisfy the *Environmental Planning & Assessment Act Section 5A*. Should the development continue without mitigation measures as we propose above then a *Species Impact Statement* would be necessary.

However an SIS and assessing authority may not be able to resolve the ecological significance arising from the development as it currently stands. This being the ecological impact arising from;

- Extensive land filling and the removal of the wetland environment within Lots 4 & 5.

- Clearing vegetation within the proposed public reserve in order to facilitate stormwater control and water quality.
- Vegetation removal within the proposed road alignment/s.

In conclusion the proposed development intended for lots 4 & 5, the proposed reserve and the road alignment west of lots 4 and 5 should not be approved.

Yours faithfully

A handwritten signature in black ink, appearing to read 'John Travers', with a large, stylized initial 'J'.

John Travers *B.A.Sc / Ass Dip / Grad Dip*
Managing Director
Travers bushfire & ecology

Appendix 1

Principles of offsetting (DECCW)

The following principles are a guide for DECCW when it is negotiating and developing biodiversity offsets to achieve conservation outcomes in situations where a loss of biodiversity is expected.

1. Impacts must be avoided first by using prevention and mitigation measures.

Offsets are then used to address remaining impacts. This may include modifying the proposal to avoid an area of biodiversity value or putting in place measures to prevent offsite impacts.

2. All regulatory requirements must be met.

Offsets cannot be used to satisfy approvals or assessments under other legislation, e.g. assessment requirements for Aboriginal heritage sites, pollution or other environmental impacts (unless specifically provided for by legislation or additional approvals).

3. Offsets must never reward ongoing poor performance.

Offset schemes should not encourage landholders to deliberately degrade or mismanage offset areas in order to increase the value from the offset.

4. Offsets will complement other government programs.

A range of tools is required to achieve the NSW Government's conservation objectives, including the establishment and management of new national parks, nature reserves, state conservation areas and regional parks and incentives for private landholders.

5. Offsets must be underpinned by sound ecological principles.

They must:

- include the consideration of structure, function and compositional elements of biodiversity, including threatened species
- enhance biodiversity at a range of scales
- consider the conservation status of ecological communities
- ensure the long-term viability and functionality of biodiversity.

Biodiversity management actions, such as enhancement of existing habitat and securing and managing land of conservation value for biodiversity, can be suitable offsets. Reconstruction of ecological communities involves high risks and uncertainties for biodiversity outcomes and is generally less preferable than other management strategies, such as enhancing existing habitat.

6. Offsets should aim to result in a net improvement in biodiversity over time.

Enhancement of biodiversity in offset areas should be equal to or greater than the loss in biodiversity from the impact site.

Setting aside areas for biodiversity conservation without additional management or increased security is generally not sufficient to offset against the loss of biodiversity. Factors to consider include protection of existing biodiversity (removal of threats), time-lag effects, and the uncertainties and risks associated with actions such as revegetation. Offsets may include enhancing habitat, reconstructing habitat in strategic areas to link areas of conservation value, or increasing buffer zones around areas of conservation value and removal of threats by conservation agreements or reservation.

7. Offsets must be enduring - they must offset the impact of the development for the period that the impact occurs.

As impacts on biodiversity are likely to be permanent, the offset should also be permanent and secured by a conservation agreement or reservation and management for biodiversity. Where land is donated to a public authority or a private conservation organisation and managed as a biodiversity offset, it should be accompanied by resources for its management. Offsetting should only proceed if an appropriate legal mechanism or instrument is used to secure the required actions.

8. Offsets should be agreed prior to the impact occurring.

Offsets should minimise ecological risks from time-lags. The feasibility and in-principle agreements to the necessary offset actions should be demonstrated prior to the approval of the impact. Legal commitments to the offset actions should be entered into prior to the commencement of works under approval.

9. Offsets must be quantifiable - the impacts and benefits must be reliably estimated.

Offsets should be based on quantitative assessment of the loss in biodiversity from the clearing or other development and the gain in biodiversity from the offset. The methodology must be based on the best available science, be reliable and used for calculating both the loss from the development and the gain from the offset. The methodology should include:

- the area of impact
- the types of ecological communities and habitat/species affected
- connectivity with other areas of habitat/corridors
- the condition of habitat
- the conservation status and/or scarcity/rarity of ecological communities
- management actions
- level of security afforded to the offset site.

The best available information/data should be used when assessing impacts of biodiversity loss and gains from offsets. Offsets will be of greater value where:

- they protect land with high conservation significance
- management actions have greater benefits for biodiversity
- the offset areas are not isolated or fragmented
- the management for biodiversity is in perpetuity (e.g. secured through a conservation agreement).

Management actions must be deliverable and enforceable.

10. Offsets must be targeted.

They must offset impacts on the basis of like-for-like or better conservation outcome. Offsets should be targeted according to biodiversity priorities in the area, based on the conservation status of the ecological community, the presence of threatened species or their habitat, connectivity and the potential to enhance condition by management actions and the removal of threats. Only ecological communities that are equal or greater in conservation status to the type of ecological community lost can be used for offsets. One type of environmental benefit cannot be traded for another: for example, biodiversity offsets may also result in improvements in water quality or salinity but these benefits do not reduce the biodiversity offset requirements.

11. Offsets must be located appropriately.

Wherever possible, offsets should be located in areas that have the same or similar ecological characteristics as the area affected by the development.

12. Offsets must be supplementary.

They must be beyond existing requirements and not already funded under another scheme. Areas that have received incentive funds cannot be used for offsets. Existing protected areas on private land cannot be used for offsets unless additional security or management actions are implemented. Areas already managed by the government, such as national parks, flora reserves and public open space cannot be used as offsets.

13. Offsets and their actions must be enforceable through development consent conditions, licence conditions, conservation agreements or a contract.

Offsets must be audited to ensure that the actions have been carried out, and monitored to determine that the actions are leading to positive biodiversity outcomes.

Appendix 2

Performance Criteria relative to the Waiver Provisions of the KPOM

The Performance Criteria identified in the Port Stephens Council KPOM are as follows:

*Proposed development (other than agricultural activities) **must**:*

(A) Minimise the removal or degradation of native vegetation within Preferred Koala Habitat or Habitat Buffers.

(B) Maximise retention and minimise degradation of native vegetation within Supplementary Koala Habitat and Habitat Linking Areas.

*(C) Minimise the removal of any individuals of preferred koala food trees, where ever they occur on a development site. In the Port Stephens LGA these tree species are Swamp Mahogany (*Eucalyptus robusta*), Parramatta Red Gum (*Eucalyptus parramattensis*), and Forest Red Gum (*Eucalyptus tereticornis*), and hybrids of any of these species. An additional list of tree species that may be important to koalas based on anecdotal evidence is included in Appendix 8.*

(D) Make provision, where appropriate, for restoration or rehabilitation of areas identified as Koala Habitat including Habitat Buffers and Habitat Linking Areas over Mainly Cleared Land. In instances where Council approves the removal of koala habitat (in accordance with dot points 1-4 of the above waive clause), and where circumstances permit, this is to include measures which result in a "net gain" of koala habitat on the site and/or adjacent land.

(E) Make provision for long term management and protection of koala habitat including both existing and restored habitat.

(F) Not compromise the potential for safe movement of koalas across the site. This should include maximising tree retention generally and minimising the likelihood that the proposal would result in the creation of barriers to koala movement, such as would be imposed by certain types of fencing. The preferred option for minimising restrictions to safe koala movement is that there be no fencing (of a sort that would preclude koalas) associated with dog free developments within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas. Suitable fencing for such areas could include:

- Fences where the bottom of the fence is a minimum of 200 mm above ground level that would allow koalas to move underneath.*
- Fences that facilitate easy climbing by koalas; for example, sturdy chain mesh fences, or solid style fences with timber posts on both sides at regular intervals of approximately 20m, or*
- Open post and rail or post and wire (definitely not barbed wire on the bottom strand).*

However, where the keeping of domestic dogs has been permitted within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas, fencing of a type that would be required to contain dogs (and which may also preclude koalas) should be restricted to the designated building envelope.

Fences which are intended to preclude koalas should be located away from any trees which now or in the future could allow koalas to cross the fence.

(G) Be restricted to identified envelopes which contain all buildings and infrastructure and fire fuel reduction zone. Generally there will be no clearing on the site outside these envelopes. In the case of applications for subdivision, such envelopes should be registered as a restriction on the title, pursuant to the Conveyancing Act 1919; and

(H) Include measures to effectively minimise the threat posed to koalas by dogs, motor vehicles and swimming pools by adopting the following minimum standards.

(I) The development must include measures that effectively abate the threat posed to koalas by dogs through prohibitions or restrictions on dog ownership. Restrictions on title may be appropriate.

ii) The development must include measures that effectively minimise the threat posed to koalas from traffic by restricting motor vehicle speeds, where appropriate, to 40 kph or less.

iii) The development must reduce the risk of koala mortality by drowning in backyard swimming pools. Appropriate measures could include: trailing a length of stout rope (minimum diameter of 50mm), which is secured to a stable poolside fixture, in the swimming pool at all times; designing the pool in such a way that koalas can readily escape; or enclosing the pool with a fence that precludes koalas. This last option should include locating the fence away from any trees which koalas could use to cross the fence.

Response to the matters raised by Port Stephens Council Coordinator of Natural Resources

In our opinion (a), (b) and (C) have been answered by Councils Coordinator of Natural Resources in a theoretical sense to the question being posed. There has been no apparent site specific ecological assessment undertaken by Councils Coordinator of Natural Resources on the proposal to remove koala habitat.

The KPOM requires that the proposed development (other than agricultural activities) **must** in section (a) *Minimise the removal or degradation of native vegetation within Preferred Koala Habitat or Habitat Buffers*. This means 'must minimise'. In our opinion the response to section (a) has not been dealt with and the waiver should not be provided.

In section (b) the proponent is required to *Maximise retention and minimise degradation of native vegetation within Supplementary Koala Habitat and Habitat Linking Areas*. There is no evidence in the assessment by Councils Coordinator of Natural Resources that this has occurred. In section (c) there is no evidence that shows the development would *Minimise the removal of any individuals of preferred koala food trees*.

(d) Has not been dealt with as there is no net gain in the Koala habitat as required.

(e) Has been dealt with but in a manner that can not be regarded as responding to (A) and (d).

(f) This has not been dealt with as there are no physical details that barriers such as tree loss of fences have been considered as restricting Koala movement across the site.

(g) No reason supplied for being adequately met.

(h) No reason supplied for being adequately met.

Therefore we are of the view that the waiver provisions are not responded to in accordance with the KPOM.