

5. ASSESSMENT

The department considers the key environmental issues for the proposal to be:

- Water Cycle Management (flooding, stormwater quality, groundwater and existing water basins);
- Impacts on Biodiversity (Consideration of the PAC footprint, threatened fauna species, Endangered Ecological Communities, SEPP – 14 Coastal Wetlands and future management plans);
- Tourist precinct/future development site;
- Traffic, Access and Public Transport;
- Infrastructure and Developer Contributions;
- Bushfire;
- Acid Sulphate Soils; and
- Other issues (subdivision staging and layout; Aboriginal cultural heritage, Tea Gardens quarry and contamination and acid sulphate soils).

5.1 WATER CYCLE MANAGEMENT

5.1.1 Stormwater Quality Assessment

The PAC's review of the previous (2006) application focussed on hydrological and ecological issues. These issues remain key issues for the assessment of the current proposal as they are the major determinants of a developable footprint on the site.

Due to the extent of Council, public and agency concerns the department engaged BMT WBM consultants to review the proposed Integrated Water Management System for the site. The PPR details a new water management system (compared to that proposed in 2006 and in this application as originally lodged), which has been designed following ongoing consultation with government agencies and the department. The new Water Management System for the site is detailed within the Concept Integrated Water Management Strategy prepared by Martens and Associates in Annexure C of the PPR.

The new Integrated Water Management Strategy differs substantially from the exhibited Concept Plan strategy, in that it now focuses upon the use of 'at source' treatment and infiltration (through the use of bio-retention devices) rather than the use of 'end of line' treatment and infiltration (using wetlands and open water bodies). The method proposed relies on a 'treatment train' that ensures treatment objectives are satisfied and maintains the integrity of downstream receiving environments (refer to **Figure 14**). This stormwater treatment strategy for the site is based on the principles of Water Sensitive Urban Design (WSUD).

Roadside bioretention swales are proposed to provide 'at source' treatment of developed areas. These "bioswales" will provide treatment through media filtration, biological uptake of nutrients, evapotranspiration and detention. Although infiltration is a feature of the bioswales, sufficient water quality treatment is also provided prior to infiltration in an effort to protect downslope receiving environments that are reliant on groundwater quality. A wetland is also required within the 'Myall Creek' catchment (the proposed northern precinct) to reduce nitrogen and phosphorus levels prior to discharge into Myall Creek. The wetland is proposed to be located to the east of the main northern precinct development footprint. A highflow bypass channel will be located within the northern precinct floodway to carry flows through the floodway and directly to Myall Creek. The proposed treatment devices assumed no infiltration (despite this occurring in reality) to ensure water quality targets were being achieved prior to any infiltration into the groundwater table. The proposed treatment train therefore also protects the integrity of the groundwater quality, which downstream SEPP 14 wetland environments rely on (refer to **Section 5.1.2** for further assessment of groundwater impact on wetlands).

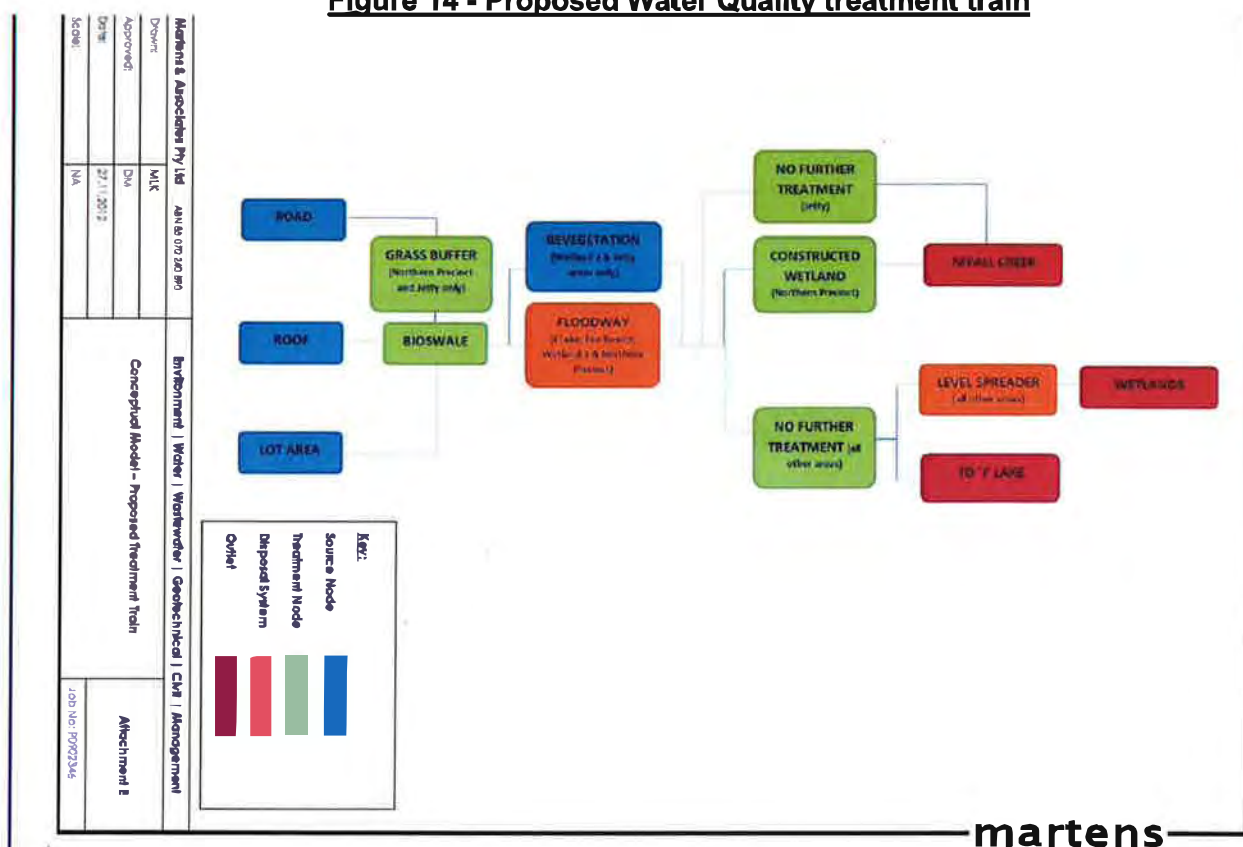
The Integrated Water Management System as now proposed has the following benefits:

- the existing Myall Quays freshwater lake is not utilised as part of the water quality treatment train;
- the proposal does not rely upon the creation of open water bodies to undertake water quality treatment;
- there is a significant reduction in potential drawdown of the water table, due to the deletion of the open water bodies;
- the use of at source treatment is to be incrementally developed in proportion to development, and as such it does not rely on large scale device implementation and management to be effective;
- the use of many small water quality devices at the street level greatly lessens the potential for catastrophic failure and consequential downstream environmental impact;
- the effectiveness of similar WSUD mechanisms has been demonstrated in other projects elsewhere; and
- the use of predominantly 'dry' water quality treatment mechanisms has allowed for the retention of existing vegetation in some areas and the planting of new vegetation within the proposed infiltration areas which will provide an improved biodiversity outcome on the site, compared to the previously proposed open water bodies.

MUSIC modelling of the full development area is provided within the Integrated Water Management System and demonstrates that the proposed system will meet or exceed the Neutral or Beneficial Effect targets (NorBE) for the system with regard to nutrient reductions. MUSIC modelling also demonstrates that gross pollutant reduction ratios have also been achieved within the system. Further, the proposal has demonstrated a matching of pre and post flow rates and water quality to downstream receptors, thus reducing the likelihood of environmental impacts.

The water management system has been demonstrated by the consultant to function both now and in 100 years time (post climate change). The revised Integrated Water Management system has also been designed to address the concerns with the previous system (as highlighted by the PAC and government agencies), and has been reviewed and endorsed by BMT WBM through the preparation and reporting phase.

Figure 14 - Proposed Water Quality treatment train



The Office of Environment and Heritage and NSW Office of Water have advised the department that the proposed arrangements for stormwater management and disposal are adequate in order to maintain water quality within the wetlands. A Water Quality Monitoring Program is to be submitted with the development application for Stage 1 subdivision works and recommended as a future environmental assessment requirement. The program must outline details of a baseline study to establish the pre-development water quality. Subsequent to this, a report on water quality is to be submitted with each application for a construction certificate for future stages. A construction certificate would not be issued until such time as the proponent can demonstrate that water quality is equal to, or better than pre-development water quality discharging from the site based on the results of the baseline study required prior to commencement of any construction works for Stage 1.

Overall, the department and relevant agencies are satisfied that the revised IWM system is a considerable improvement on the previous proposal and it is considered that potential stormwater runoff impacts on the adjacent wetlands are acceptable.

5.1.2 Groundwater Quality Assessment

Concerns were raised previously by NoW regarding the management of groundwater onsite, in particular that some excavation works (that intercepted groundwater) that had already commenced on the site (see discussion under **section 5.1.4**, Existing Water Basins). NOW was also concerned over the pollutant export load to the brackish lake and then the Myall River, particularly the potential for eutrophication of the existing brackish lake. NOW's main concerns were reflected in a number of recommended strict assessment requirements requiring no extension to the existing brackish lake, no direct connection between the stormwater management system and existing brackish lake, no new excavations below the groundwater table, and no impact on the existing groundwater aquifer quality resulting from development. NoW also required that "*stormwater discharges result in a Neutral or Beneficial Effect on groundwater quality*".

Of particular concern to the department, NoW and OEH was the impact on vegetation and water quality as a result of urban stormwater run-off being directed towards the SEPP 14 wetlands. A number of public submissions also raised concern in regards to the impacts of urban development on the health of the Myall River and the adjoining wetland ecosystems. The character and distribution of wetland communities on the site is substantially a product of the water balance, being the inputs and outputs of water, saline and fresh, to the site. The proposed drainage system, hard surfaces and filling will fundamentally change the hydrology of the wetland and therefore it is important to consider potential stormwater and groundwater impacts on the wetland as a result of the project.

In order to address the above concerns, a revised groundwater model has been prepared for the proposal and submitted with the PPR (incorporating additional groundwater monitoring data) which demonstrates maintenance of ground water flow rates and quality, as well as water table heights at adjacent environmental receptors. The revised groundwater model and Groundwater Management Strategy, formulated by Martens & Associates, utilises additional groundwater data, including increased data coverage, and addresses concerns raised by various agencies. The Groundwater Management Strategy integrates closely with the Stormwater Management Strategy utilising 'at source' recharge mechanisms to ensure NorBE impacts on groundwater patterns; to comply with the requirements of NoW.

The groundwater modelling now shows that with the revised regime:

- there will be minor areas of groundwater interception within the development footprint. However, no discernible impact from the proposed development is likely on SEPP 14 wetland groundwater levels and water budgets;
- there will be no discernible impact on water quality and levels in the existing brackish lake (J Lake);
- the NorBE condition on groundwater resources for the site and surrounding areas will be achieved; and
- the groundwater regime will be largely unchanged from existing conditions. This is due to the distributed WSUD approach to water quality management and recharge where possible in the catchment.

The department considers that appropriate measures and conditions have been included to ensure the proposed development will not detrimentally impact on SEPP 14 – Coastal Wetland areas or water quality within the Myall River. This view is supported by BMT WBM which has advised that the Strategy “adequately covers the necessary treatment elements required to protect downstream receiving environments, including the adjacent wetlands, from both groundwater and surface water impacts resulting from development.”

The revised water management assessment within the PPR demonstrates that the proposed development will not result in any discernible impact on water quality or groundwater levels. On this basis the department and relevant agencies are now satisfied with the revised Integrated Stormwater and Groundwater Management system proposed.

5.1.3 Flooding Assessment

The site is situated in an area known to be subject to flood inundation during significant rainfall events. Concerns were raised by members of the public and agencies with regard to potential flooding impacts, particularly during PMF events, and those impacts on emergency services operations. Requests were also made by government agencies to provide further flood modelling which considered additional flood events not previously modelled, and to consider modelling parts of the site not previously modelled. The impact of filling on the flood behaviour on adjacent sites was also requested to be considered in more detail, along with the implications of climate change which was raised by the PAC in relation to the previous proposal.

A revised Flood Assessment prepared by Tattersall Lander Pty Ltd has been provided with the PPR. To address the flooding related issues raised by agencies such as Office of Environment and Heritage (OEH), 2D modelling of the proposal was undertaken by Tattersall Lander Pty Ltd and submitted as Annexure C of the PPR.

In summary, the Tattersall Lander report considered:

- minor rainfall events (quarterly and annual ARI) to demonstrate existing stormwater discharge patterns into the wetland buffer can be maintained for regular rainfall events;
- critical major storm (100yr ARI) scenarios to ensure peak (potentially scouring) velocities into the wetland buffer would not be increased due to the development;
- 5yr, 20yr and 100yr events to ensure no detrimental impact on flooding of downstream or upstream lands as a result of modifying drainage structures and filling on the site;
- critical 100yr flood levels to determine the appropriate Flood Planning Levels for future dwellings on the site, including an assessment of the sensitivity of these results to possible future Climate Change induced intensity increases; and
- PMF/extreme flood levels and hazards to demonstrate access to emergency services and ensuring public safety within the development in even the worst conceivable flood conditions.

As identified in the Tattersall Lander flood assessment (also refer to **Figure 15**) the 100 year peak flood levels for the site range between 2.8m and 3.5m AHD. The minimum recommended Flood Planning Level (FPL) is 0.5m above these 100 yr peak flood levels that ranges across the site between 3.31 and 4.0m AHD, which is consistent with Great Lakes Council's recommendations to adopt 0.5m freeboard above the adopted Flood Planning Levels.

The Tattersall Lander report concluded that “*the proposed Riverside development will not have an adverse impact on the flood behaviour on or around the site, and developed areas will remain essentially flood free.*” More specifically the report notes:

- The combination of the storage and low flow discharge structures ensure existing regular 'environmental' flows into the wetland buffer are maintained post-development;
- High flow discharge via the level spreader over the full downstream frontage of the site ensures the development will not result in any increase of potentially damaging 100yr peak flow velocities in the downstream wetland;
- Existing flood levels in surrounding areas would not be adversely impacted post development;
- The proposed development includes sufficient lot filling/floodway capacities to allow all lots to remain flood free in the design 100yr event. Relevant “Flood Planning Levels” have been determined for the entire development. This includes an assessment of the possible impact of

Climate Change induced rainfall intensity increases and sea level rise on the Flood Planning Level assessment; and

- The 'worst case' Probable Maximum Flood (PMF) assessment demonstrates the proposal would sufficiently cater for the safety of all future residents.

A commitment has been made by the proponent that all dwelling floor levels site will comply with the FPL's contained within the Concept Integrated Water Cycle Management Strategy and Great Lakes Council's freeboard requirements.

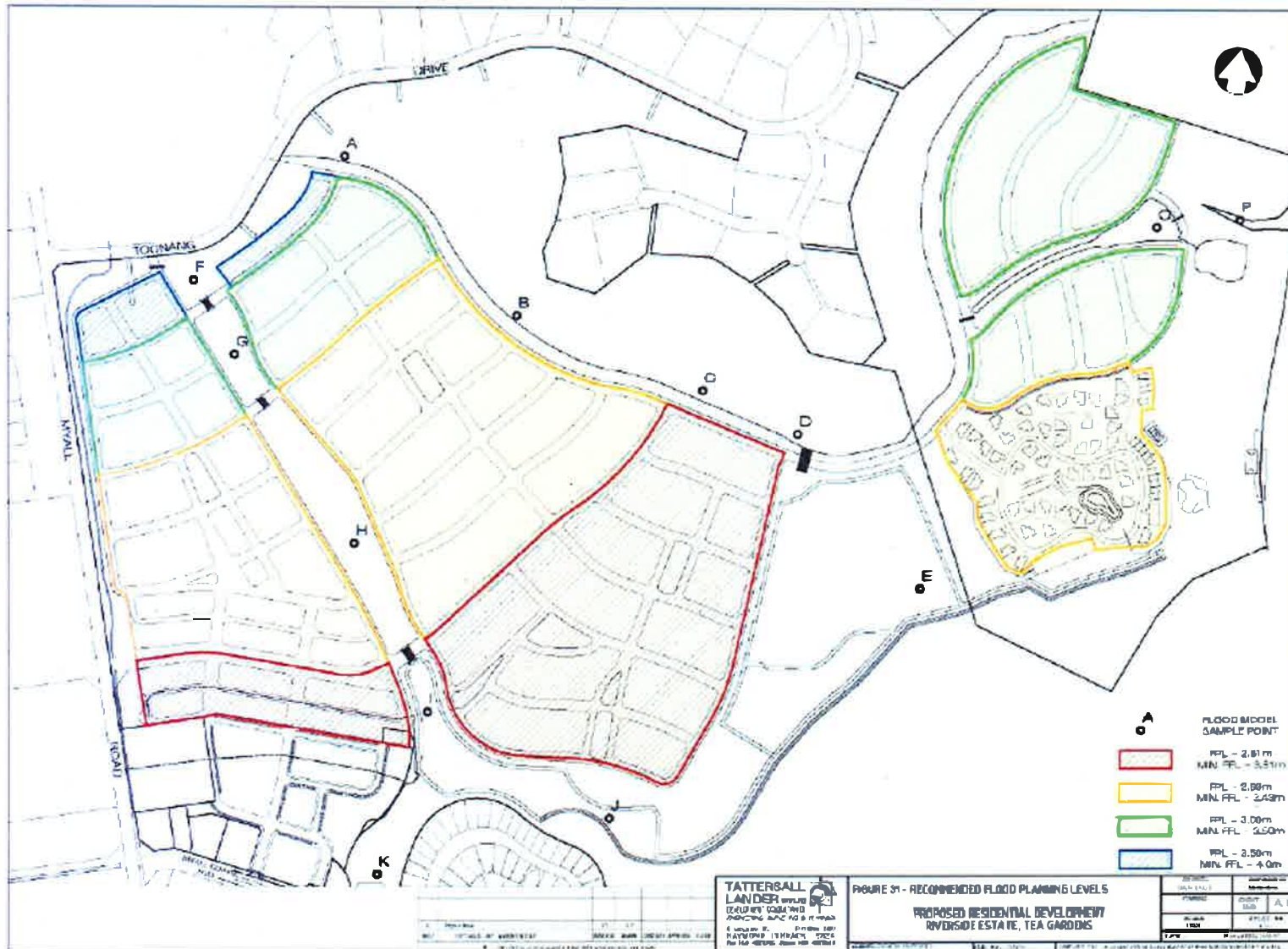
The Office of Environment and Heritage has reviewed the PPR and the Tattersall Lander Flood Assessment and has requested some further modelling and sensitivity testing to be undertaken by the proponent. However, the department's flooding consultant, BMT WBM has reviewed the proponent's flood assessment and proposed flood planning level and concluded that the flood assessment was satisfactory for concept plan stage and demonstrates that the proposal would not adversely impact on local flooding on or around the site. The flood assessment provided by the proponent is considered to be more extensive than generally required at concept plan stage. Therefore the department, is of the view, based on the expert advice from BMT WBM, that the additional flood modelling required by OEH is not necessary at concept plan stage. However, more detailed modelling and analysis including a final public safety assessment is required with the first DA for subdivision in accordance with OEH's recommendations.

The department is satisfied that the revised flood modelling has demonstrated that the proposal will not have an adverse impact on the flood behaviour on or around the site and will not adversely impact on the wetland area or other areas of ecological significance post development. Further the developed areas will remain essentially flood free (to the design 100yr event). Climate change scenarios have been taken into account in the flood assessment, which satisfies the flooding concerns raised in relation to the previous application in the PAC Majority Report.

The department is generally satisfied with the Public Safety Assessment which indicates that the safety of future residents is catered for by:

- providing significant areas of high ground (all residential lots) are available for refuge; and
- that flood free safe evacuation routes in the event of a peak PMF event.

**Figure 15 - Recommended Flood Planning Levels
Tattersall Lander Report**



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5.1.4 Existing Water Basins

Two existing (detention) basins that have been constructed on the Riverside site, adjacent to Stage 8 of the adjoining Myall Quays development, which is also owned by Crighton Properties (proponent). These basins are identified on the engineering drawings included in the Concept Plan PPR as 'existing basins'.

The department has been advised by the proponent, by email dated 3 April 2013, that:

1. *The basins that adjoin Stage 8 and the Commercial areas of the project were included in the modelling designs as they exist, ie the basins are a constraint that needed to be modelled.*
2. *The Riverside development does not require the existence of the basins for flood management or stormwater management.*
3. *We have provided modelling results to WBM to confirm that the impact of the basins existence had no impact on flood behaviour of the Riverside Development.*
4. *The basins are required for stormwater management and water quality functions relating to other adjoining lots (both completed and sold and other yet to be released) within Stage 8(d1), 8(d2) and 8(e) as well as the 5 lots to the south off Shoreline Drive (DA 433/2011)."*

The NSW Office of Water has raised concerns about these existing basins in its response to the EA and PPR. In particular, NOW notes that these existing structures are not supported as NOW has "received no advice regarding the lining of the lake, and does not support the northwards extension of the saline lake, or any further 'window lakes'."

As these basins are not relied upon by the Riverside Concept Plan for flood or water management it is not appropriate for them to be approved as part of this application. Therefore an appropriate Term of Approval has been included to indicate that they have not been assessed as part of this application and do not form part of the Concept Plan approval. The department's compliance team is currently investigating the legality of these basins to determine whether approvals have been issued for these works. This issue will therefore be considered separately by the department's compliance team.

5.2 IMPACTS ON BIODIVERSITY

Although the site has, for some time, been subjected to agricultural use, including cattle grazing and pine tree plantations, which has necessitated vegetation clearance of parts of the site, the site still supports a range of plants and animals that are listed on schedules of both NSW and Commonwealth threatened species conservation legislation. The main issues for the assessment of impacts on flora and fauna has been to ensure the proposal has been designed sensitively, in light of ecological constraints and the principle of avoidance of impact; and to ensure appropriate measures have been put in place to ensure the survival of the local populations of flora and fauna in the long-term.

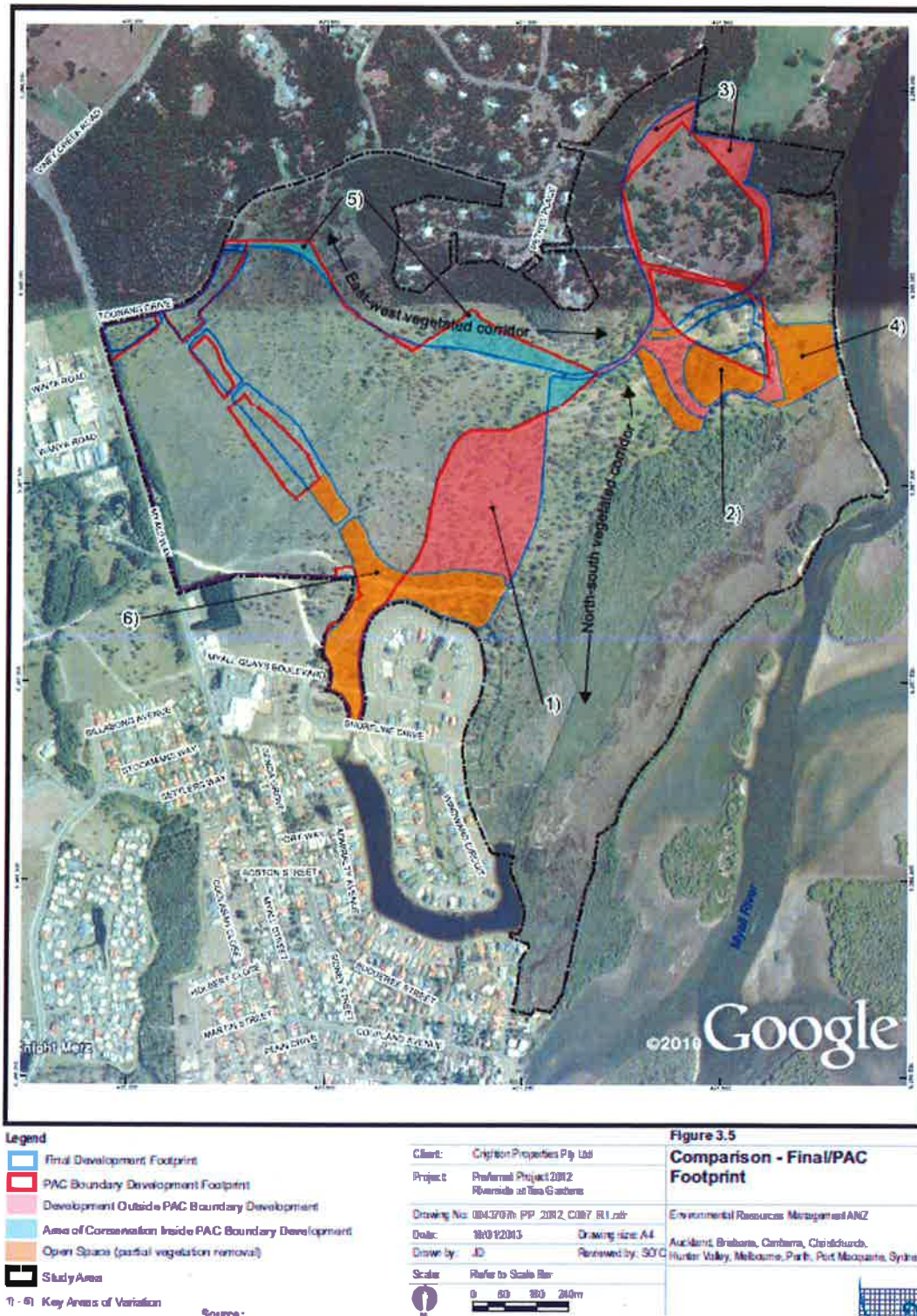
The subject site and surrounding areas are considered to have significant biodiversity values given the close proximity to the Myall River and SEPP 14 – Coastal Wetlands, as well as the presence of known threatened flora and fauna species. The proponent engaged Cumberland Ecology to prepare an ecological study and further vegetation mapping to outline the potential impacts of the proposal on existing and adjoining environments and ecosystems. A fauna investigation of the site was also prepared, with particular emphasis on the recording of threatened species listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act). This report identifies a number of threatened flora and fauna species known to occur within the site, including Swamp Sclerophyll Forest, Swamp Oak Floodplain Forest and Coastal Saltmarsh.

Submissions were received from both the public and government agencies in response to the EA, concerning potential impacts of urban development on the ecological values within and surrounding the site. Concern was also raised regarding the proposed development footprint extending beyond the footprint suggested by the PAC in their consideration of the previous (2006) application. The impacts on threatened species, EEC's, and on surrounding areas of ecological significance; and a comparison of the proposal against the 'PAC footprint' are discussed in **Sections 5.2.1 - 5.2.5** below.

5.2.1 Consideration of the Planning Assessment Commission (PAC) Footprint

The previous (2006) application (which was a concept plan and a first stage project application) was reviewed by the PAC in 2009. The terms of reference of the PAC were focused on the review of two main areas: the ecological constraints of the site and the hydrological issues associated with groundwater, the SEPP 14 wetland and flooding. The PAC Majority Report indicated a potential footprint that was thought to be more suitable for development (see **Figure 16** – the PAC footprint is the red line; the pink shading are the areas in the current application outside of the PAC footprint).

Figure 16 - Proposed development footprint overlain on PAC footprint



The current Concept Plan reduces the development footprint significantly from the original (2006) application, although part of the proposed footprint still remains outside the PAC footprint (refer to **Figure 16**). At the department's request the proponent was required to provide further justification for the current footprint.

The proponent's justification is summarised below:

- The Biobanking assessment has followed a complete re-mapping of biodiversity values upon the site since initial consideration by the PAC;
- A number of avoidance and mitigation strategies have been implemented prior to the reconsideration of appropriate offsets;
- The Biobanking assessment has addressed the PAC requirements for the assessment of ecological impacts upon the site through revised mapping of vegetation, threatened fauna habitats and conservation significance and a more detailed assessment of habitat connectivity;
- The Biobanking assessment approach has delivered a development layout that achieves an appropriate balance between development and conservation outcomes based on a robust methodology;
- The final development site layout is an efficient and accurate response to a greater understanding of biodiversity values upon the site than either of the previous two layout options (original and PAC suggested development footprint) allowing for both ecological conservation and a reasonable development outcome from the site. It is important that the development layout and Onsite and Offsite Biobanking outcomes are considered together – something that the PAC did not have the benefit of assessing;
- The proposed on-site Biobank offset would conserve the most valuable habitat in the study area both in terms of the condition of vegetation and habitat connectivity. In addition, the biodiversity values and habitat diversity will improve significantly through time as these areas will be actively rehabilitated and managed for conservation. The final Biobank offset maximises the width of an east-west fauna movement corridor and estuarine and floodplain habitats adjoining the Myall River;
- The process of sourcing offsite offsets allow for the selection of offsets which are both more strategically located, contain higher biodiversity values and have greater connectivity, without the short term impacts of associated civil works adjacent or within the offset areas. It should also be noted that the Biobanking Methodology includes habitat requirements for suitable offsets meaning the Biobank off-site will require habitat suitable for both the Koala and Wallum froglet;
- Whilst the proposed concept footprint is only 20 ha larger than the PAC development footprint it will result in the establishment of an offsite offset conservation area which is 156 ha larger than that provided for the PAC footprint. This offset can be provided in a strategically better location and of greater quality habitat – representing a larger net benefit to the environment; and
- Whilst it may be technically possible to adjust the development footprint to mimic the PAC suggested footprint this would only have the effect of preserving areas of lower quality habitat or lower corridor value on site (and next to an existing urban centre), at the expense of far greater areas of higher quality habitat which can be preserved within the region; and Developing areas of greater quality habitat or corridor value on site which are currently proposed for conservation.

The department's view, having thoroughly considered the modified footprint and the supporting biodiversity assessment, is that the variation beyond the 'PAC footprint' is justifiable based on:

- More accurate vegetation mapping has now been undertaken and there is sufficient information acceptable to both OEH and the department;
- The proposal maximises the width of an east-west fauna movement corridor; and
- The proposed biodiversity offset package conserves land 'in perpetuity' both on and offsite, via a biobanking agreement. The offset parcel is of potentially greater environmental value as it is a large consolidated parcel of land or lands which are strategically better located and will require better quality habitat suitable for both the Koala and Wallum froglet.

The department's view is also supported by the Office of Environment and Heritage (OEH) which has advised by letter dated 4 March 2013 that they support the proposal subject to the development and approval of a biodiversity offsetting package, noting that:

"OEH supports this approach as this is consistent with how threatened species can be formally assessed under other parts of the Environmental Planning and Assessment Act 1979 and it provides a quantitative appraisal of what would be an acceptable offset package to compensate the likely impacts of the project."

5.2.2 Consideration of Endangered Ecological Communities

A revised ecological assessment was undertaken by Cumberland Ecology in 2011 and submitted with the EA. The Cumberland Ecology assessment identified that three vegetation communities within the site correspond to Endangered Ecological Communities (EECs) listed under the *Threatened Species Conservation (TSC) Act*, as follows (refer to **Figure 17**):

- Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions;
- Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions; and
- Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions.

The EEC's presently on the site covers an area of 66.87 hectares. As identified in **Figure 18** the total impact of the project upon EEC's on the site (including development and drainage works) is 3.18 ha or 4.8%. This is less than half the impact for the original Concept Plan in the EA (approximately 6.7 ha), and substantially less than the original (2006) application considered by the PAC. No additional threatened flora species have been identified within the study area as a result of the additional vegetation mapping undertaken by GHD for the proponent.

Figure 18 - Impact of Concept Plan on EEC's

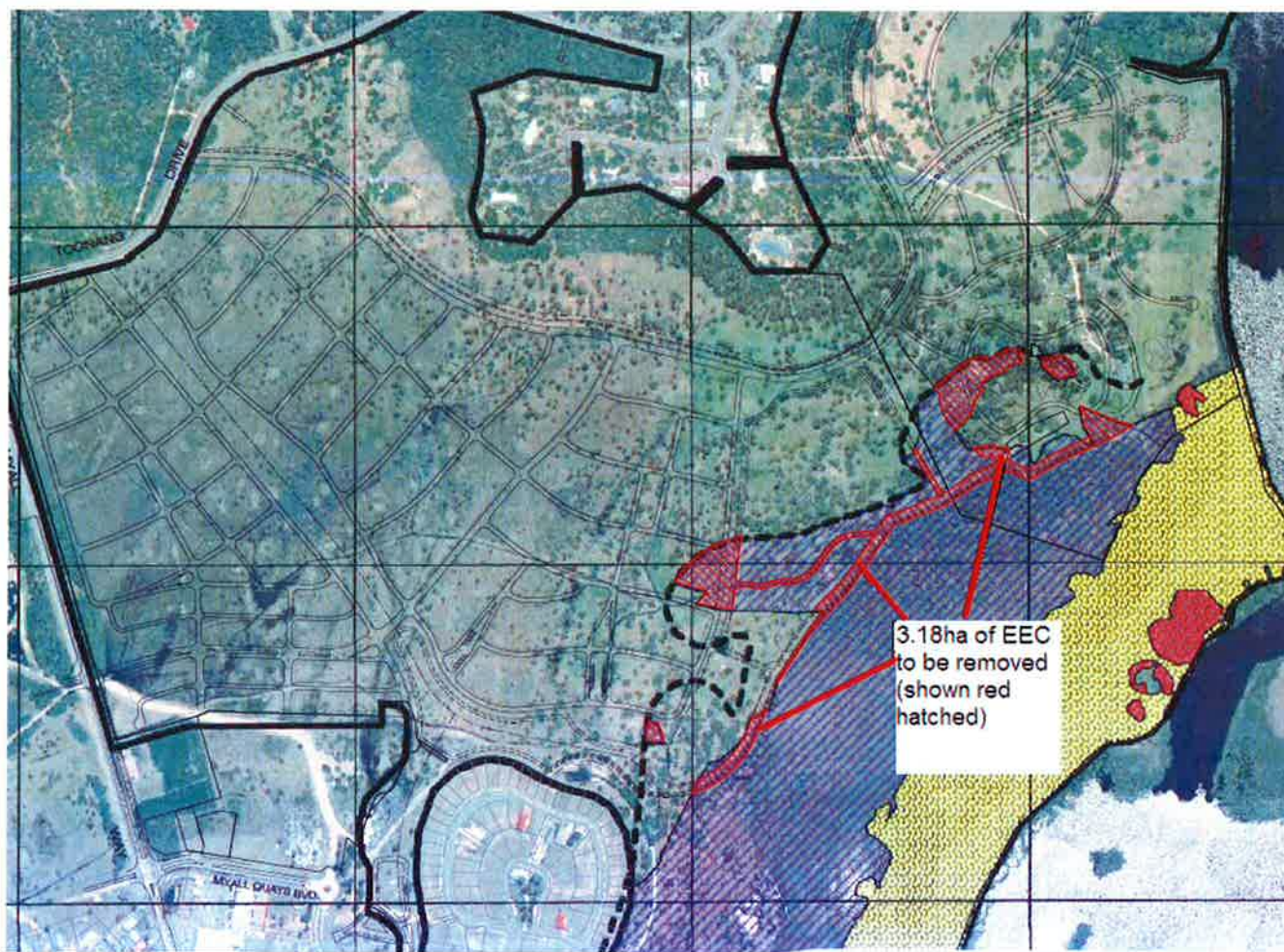
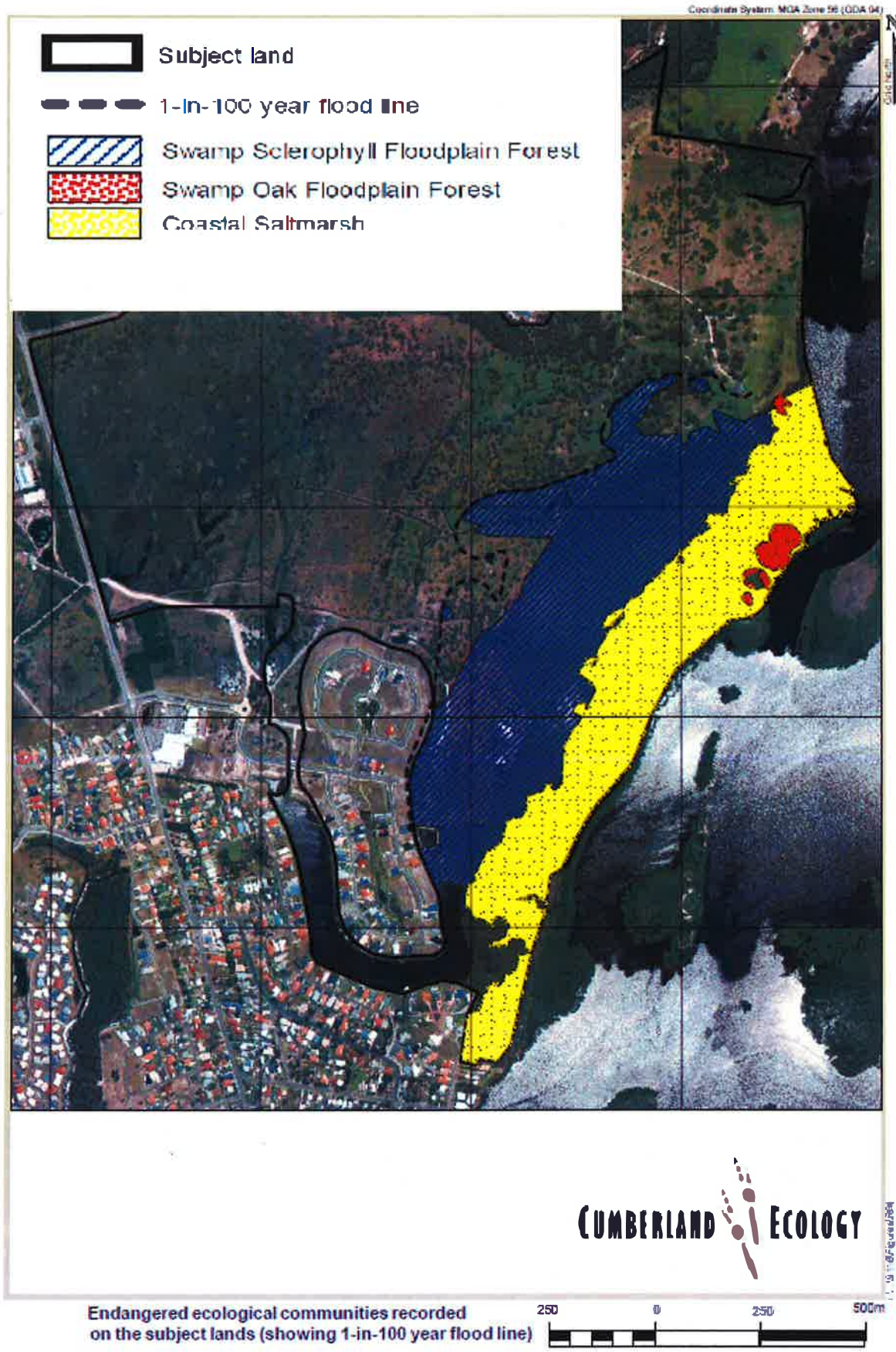


Figure 17 - Endangered Ecological Communities – Cumberland Ecology 2011



The proponent has identified in its Integrated Water Management Strategy that best practice WSUD measures are to be implemented with the intention of maintaining the quality of stormwater and soils, and subsequently minimising the impacts of urban stormwater run-off on downstream vegetation communities. The majority of the EECs are located within that part of the site proposed to be retained as a conservation area under a future Biobanking Agreement (refer to **Section 5.2.3**). The proponent is also committed to the preparation of a comprehensive Vegetation Management Plan (VMP) for the proposed conservation lands in consultation with Council and OEH, as outlined in the Statement of Commitments. The department supports the preparation of the VMP and this is reflected in the recommended Terms of Approval. The department considers that the proposed WSUD principles; the preparation of a VMP for the site; and the provision of onsite conservation lands, will ensure that the EECs are protected and maintained in their current form.

5.2.3 Consideration of Biobanking Assessment

In response to concerns raised by OEH in relation to the previous vegetation mapping, new ecology consultants were engaged by the proponent and additional ecological and hydrological assessments have been prepared and submitted with the EA. In addition, OEH recommended that a Biobanking Assessment be undertaken by the proponent to assess the project's biodiversity impacts and to assist in determining suitable conservation offsets to mitigate the impacts of the proposed development. The department also encouraged the proponent to consider the biobanking methodology if development outside of the PAC footprint was to be pursued, as eventuated in the current application.

GHD consultants were subsequently engaged to undertake the Biobanking assessment and this report was included in the PPR. This assessment was supported by extensive consultation with OEH to provide an agreed vegetation distribution and condition map for the site, quantify impacts and confirm applicable offsetting measures to mitigate potential impacts. The revised vegetation distribution map has formed the basis of consultation with government agencies to determine the final development footprint which has been sited and designed to avoid, where possible, the most valuable vegetation and habitat on the site.

The final development footprint has been modified following further analysis of the site, comparing the Biobanking assessment results of three development options (including consideration of the PAC development footprint). As identified in the GHD report biodiversity offsets are required for each of the three development options to compensate for residual impacts on EECs, threatened species and their habitats and clearing of native vegetation. These offsets are required to be conserved under Biobanking agreements to mitigate the impacts of the development.³

The GHD report recommends a comprehensive 'on site' and 'off site' offsetting package in accordance with the Threatened Species legislation and OEH requirements. This package will result in approximately 116 hectares of land being conserved on-site (protected in perpetuity); and approximately 258 Ha being protected off-site. It should be noted that no off-site offsets were proposed in the previous application.

This biodiversity offset strategy is supported by OEH (subject to the undertaking of a Biodiversity Agreement) and will ensure appropriate management of these conservation lands 'in perpetuity'. The proposed development of the site will also provide resources to facilitate the rehabilitation and management of the proposed conservation lands, thereby improving their condition and biodiversity values.

The department acknowledges that the proposed development footprint has been significantly reduced in size as a result of further studies and addresses the concerns raised by state government agencies and the Council. The development footprint has been reduced by more than 20 hectares since the previous application considered by the PAC; and approximately 5 hectares has been removed from

³ A BioBanking Agreement places a conservation covenant over the land, regardless of zoning. The covenant is the strongest available on private lands and extinguishes all land uses other than conservation on the relevant land. The BioBanking agreement will require vegetation rehabilitation, maintenance and monitoring to occur in perpetuity over the biodiversity offset sites and also includes detailed contractual and financial obligations on the landowner/proponent.

the development footprint since exhibition of the EA in 2012. These reductions have been strategically located within areas of greatest quality habitat or corridor value, as identified within the revised mapping provided within the PPR.

In the department's view, the final development footprint presents an acceptable outcome as it:

- conserves the most valuable habitat on the site,
- maximises the width of an east-west fauna movement corridor; and
- provides a suitable biodiversity offset strategy for the delivery of both on-site and off-site conservation lands.

Notwithstanding OEH's support of the proposal to provide biodiversity offsets to compensate for the project impacts, it has raised concern with the proposed management of (on-site and off-site) offsets by the Community Association, stating that:

"OEH does not support the proposal to apply 'Community Title' over the on-site offset areas, as proposed on pages 38 and 39 of the PPR. OEH has consistently advised both the proponent and DP&I of this position. The use of 'Community Title' is not in accordance with OEH policy and is not acceptable to OEH as it is not considered an appropriate mechanism to ensure conservation and management of the offset lands in perpetuity. If 'Community title' is used in relation to the provision of offsets for this proposal it will jeopardise OEH's future support for the offset package. Furthermore, OEH noted that the use of Community title' is inconsistent with the offsetting proposal discussed in 'Appendix D Revised Biobanking Assessment Report.'"

OEH has also raised objection to a staged approach to the provision of offsets stating that "...given the location of the site and the level of impact likely to occur as a result of this development, OEH recommends that all offsets (both on-site and off-site) are provided prior to any development occurring to ensure all necessary offsets are available and secured."

In relation to the location of the off-site offsets, both Council and OEH require that this land be provided within the vicinity of the site to ensure that the land contributes to the protection of the endangered koala population. The department is also of the view that the management, location and the timing of the offsets is an important consideration to ensure that the impact of the development is appropriately mitigated by providing the conservation lands and an appropriate biodiversity package within a suitable timeframe.

Terms of Approval – Offsets

As the future ownership of the site will now be split (being now PWC as receivers for Crighton Properties and one lot will be retained by Geoffrey Cox), the two parties have requested that the department consider that the respective lots be developed separately. In order to permit the development of Lot 19 and Lot 40 (PWC) to occur independently of Lot 10 (Cox), the securing of the on-site and off-site offsets has been linked to the proposed staging of the project, as follows:

- **Phase 1** means Stages 1 to 4 as identified in the Staging Plan;
- **Phase 2** means Stages 5 to 12 as identified in the Staging Plan; and
- **Phase 3** means Stages 13 to 14 as identified in the Staging Plan

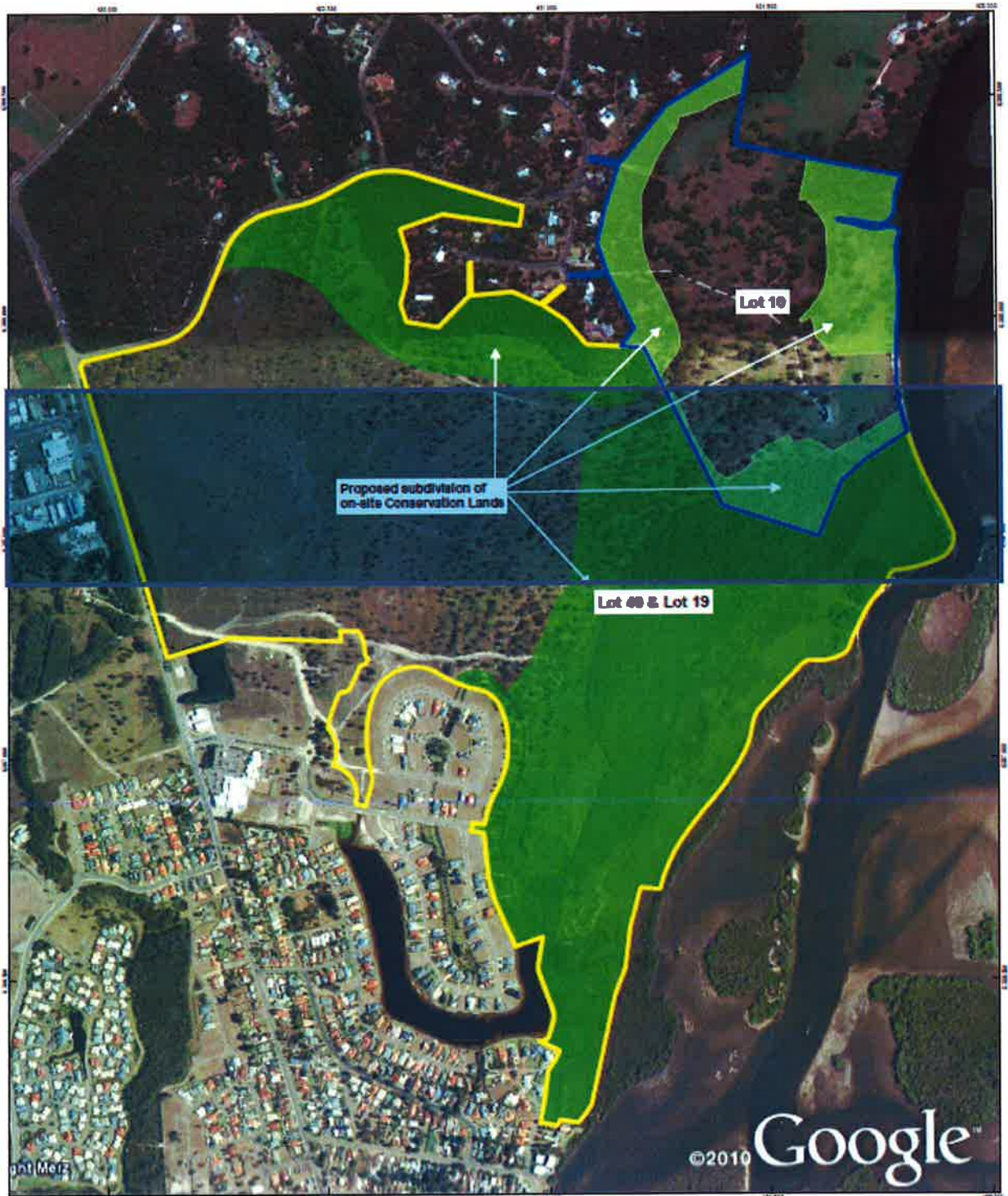
It has been recommended that as provided for under section 75P(5) of the Act, the final approval for each of the above phases would only occur once the Director-General is satisfied that appropriate arrangements have been made for the securing of the required offsets. An appropriate term has therefore been recommended in the Concept Plan Instrument of Approval (A5) to reflect this relative to the above phases of development. In effect, each owner will need to secure both on-site and/or off-site offsets, as relevant prior to final development approval of their respective stages occurring. This safeguard is proposed to ensure that certainty given by the concept plan, particularly the approval to remove EEC and threatened species habitat is secured in the absence of draft biobanking agreement or details of the offsets being provided. The off-site offset must be located within the vicinity of the site and comprise good quality habitat suitable for koala. The department also agrees with OEH's advice that the Community Association should not own or manage the conservation lands and the proponent

has included a commitment that the Community Association will not own or manage the conservation offsets.

The size of the offsite offset is dependent on the final biobanking offset package, which is to be prepared in accordance with the proponent's Statement of Commitments and the terms of the concept plan approval. The extent of the on-site conservation land has been established by the Concept Plan. In order to clearly define the on-site conservation lands.

To facilitate the future securing of this land, the department has therefore recommended that the Minister exercise his powers under Section 75P(1)(c) of the Act and issue project approval for a subdivision to excise this land into 5 lots (in a manner which reflects the new ownership pattern). The Project Approval and recommended conditions are attached at **Annexure E**. A plan identifying the on-site conservation land to be subdivided is provided in **Figure 19** below.

Figure 19 – Possible Subdivision of On-site Conservation lands



LEGEND

Boundaries	On-site Conservation Lands
 Lot 10	 Lot 10 on-site Conservation Lands (biobank) to be sub divided*
 Lot 40 & Lot 19	 Lot 40 & Lot 19 on-site Conservation Lands (biobank) to be sub divided*

* Includes development drainage works that would be rehabilitated and included in the biobank

<p>1:8,000 Paper 3 to A3</p> <p>Map Projection: UTM, datum: GDA94, units: metres Date: 24 May 2013</p>		<p>GHD EXP. PERFORMANCE</p>	<p>Origion Properties Pty. Ltd. Riverside at Tea Gardens - Biobanking Assessment</p> <p>Future Subdivision Layout of On-Site Conservation Lands</p>	<p>Job Number: 22-15980 Revised on: U Date: 24 May 2013</p>
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5.2.4 Threatened Fauna Species

Fauna surveys have been conducted on the subject site over the past two decades, most recently in 2007 and 2008 by Conacher to identify the location of fauna on the site. Survey methods utilised by Conacher included:

- Amphibians: habitat searches, pitfall trapping, nocturnal habitat searches, opportunistic survey, call playback, spotlighting;
- Birds: opportunistic survey, winter bird survey, call playback, spotlighting;
- Mammals: trapping (ground and arboreal), pitfall trapping, hair tubes, diurnal observation, koala spot surveys, call playback, spotlighting, anabat detection, harp traps; and
- Reptiles: habitat searches, pitfall trapping, opportunistic survey, spotlighting.

These surveys have resulted in the detection of over 200 vertebrate species on the site including 20 amphibian, 125 bird, 43 mammal and 15 reptile species. Amongst these species, the following threatened fauna species have been recorded on the subject site (**Refer also to Figure 20**):

- Wallum Froglet (*Crinia tinnula*);
- Varied Sitella (*Daphoenositta chrysoptera*);
- Little Lorikeet (*Glossopsitta pusilla*);
- Black Bittern (*Ixobrychus flavicollis*);
- Osprey (*Pandion haliaetus*);
- Barking Owl (*Ninox connivens*);
- Squirrel Glider (*Petaurus norfolkensis*);
- Koala (*Phascolarctos cinereus*);
- Grey-headed Flying-fox (*Pteropus poliocephalus*);
- Common Blossom-bat (*Syconycteris australis*);
- Little Bentwing-bat (*Miniopterus australis*);
- Eastern Bentwing-bat (*Miniopterus screibersii oceanensis*);
- Eastern Freetail-bat (*Mormopterus norfolkensis*); and
- Greater Broad-nosed Bat (*Scoteanax rueppellii*).

All of the above species are listed as Vulnerable under the Threatened Species Conservation (TSC) Act.

The Grey-headed Flying-fox is also listed as Vulnerable under the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 and hence is a 'matter of national environmental significance' and referral to the Commonwealth is required under the EPBC Act.

Under the Biobanking Assessment prepared by GHD those threatened species determined to be present on the site and requiring calculation of species credits included:

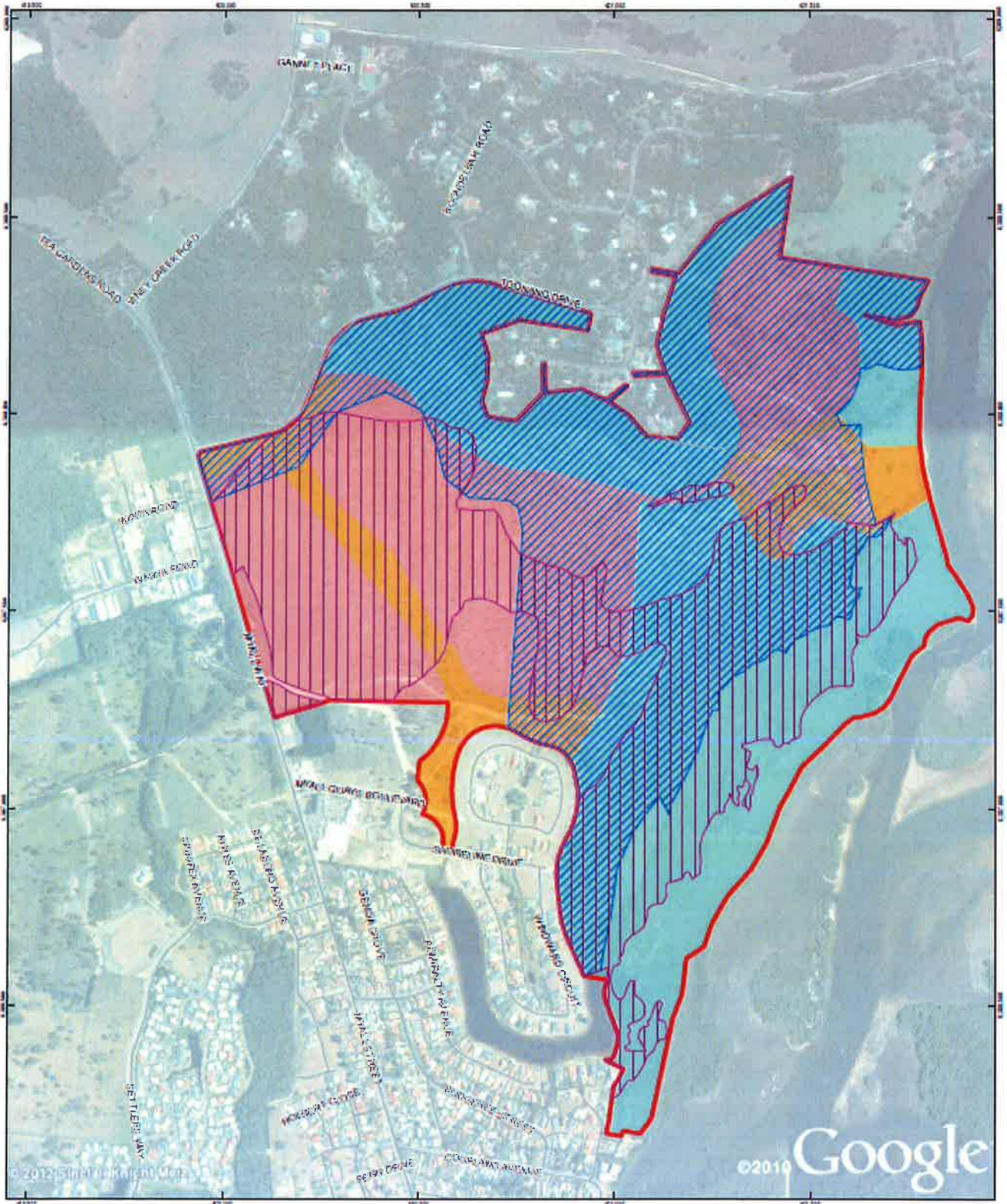
- The Hawks Nest and Teagardens Koala Endangered Population (Koala population); and
- Wallum Froglet.

The habitat for Koalas and Wallum Froglets has been mapped by GHD, based on habitat assessments undertaken during site surveys and consultation with OEH and DPI (refer to **Figure 21**). Public submissions, including one from the Myall Koala and Environment Group, raised particular concern with regard to impacts on the endangered Koala population. The impacts on Koalas and the Wallum Froglet is considered in more detail below.

Figure 20 - Location of Threatened Species Recorded on the site (Cumberland Ecology)



Figure 21 - Extract from GHD Biodiversity Assessment – identifying koala habitat (blue hatched) and wallum froglet habitat (purple hatched)



Study Area	Management Zones
Wallum froglet species polygon	Elsbank Dike
Koala species polygon	Development (complete vegetation removal)
	Open Space (partial vegetation removal)

<p>1:5,000 Paper Size A3</p> <p>11 45 49 193 237 381</p> <p>Metres</p> <p>WGS 1984 UTM Zone 56 East</p> <p>PROJECTION: UTM Zone 56 East</p> <p>MAP COORDINATE: 1486798.8</p> <p>GRID: UTM (Zone 56 East)</p>		<p>CLIENTS EXPERTS PERFORMANCE</p>	<p>Engham Properties Pty. Ltd. Riverside at Tea Gardens - BioBanking Assessment</p>	<p>Job Number: 22-15060 Revision: A Date: 24 Sep 2012</p>
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Impact on Koala population

The Koala has been recorded once on the site during surveys in 1992 (Mount King Ecological Surveys 1992). The previous Conacher EAR notes an unconfirmed DECCW record of a Koala in 1995. The Conacher 2007/2008 surveys recorded no evidence of the Koala on the subject site, and the subject site is not considered to currently support a Koala population.

The Hawks Nest and Tea Gardens Koala Population has declined from at least 21 individuals in 1989 to as few as 12 individuals in 1998 and is now in immediate danger of extinction (NSW Scientific Committee 2000a). This decline has been primarily attributed to continuing urban development of the area, particularly the associated removal of key habitat.

In 1999 the Hawks Nest and Tea Gardens Koala population was listed as endangered on the *Threatened Species Conservation (TSC) Act 1995*. The TSC Act provides a framework to protect and encourage the recovery of endangered species through the development of a Recovery Plan. As such, OEH developed the *Hawks Nest - Tea Gardens Endangered Recovery Plan*, which was approved in 2004. The recovery plan notes the ability of the Hawks Nest and Tea Gardens Koala Population to recover ultimately lies with the protection and restoration of suitable habitat and linkages within the defined population area and surrounding areas.

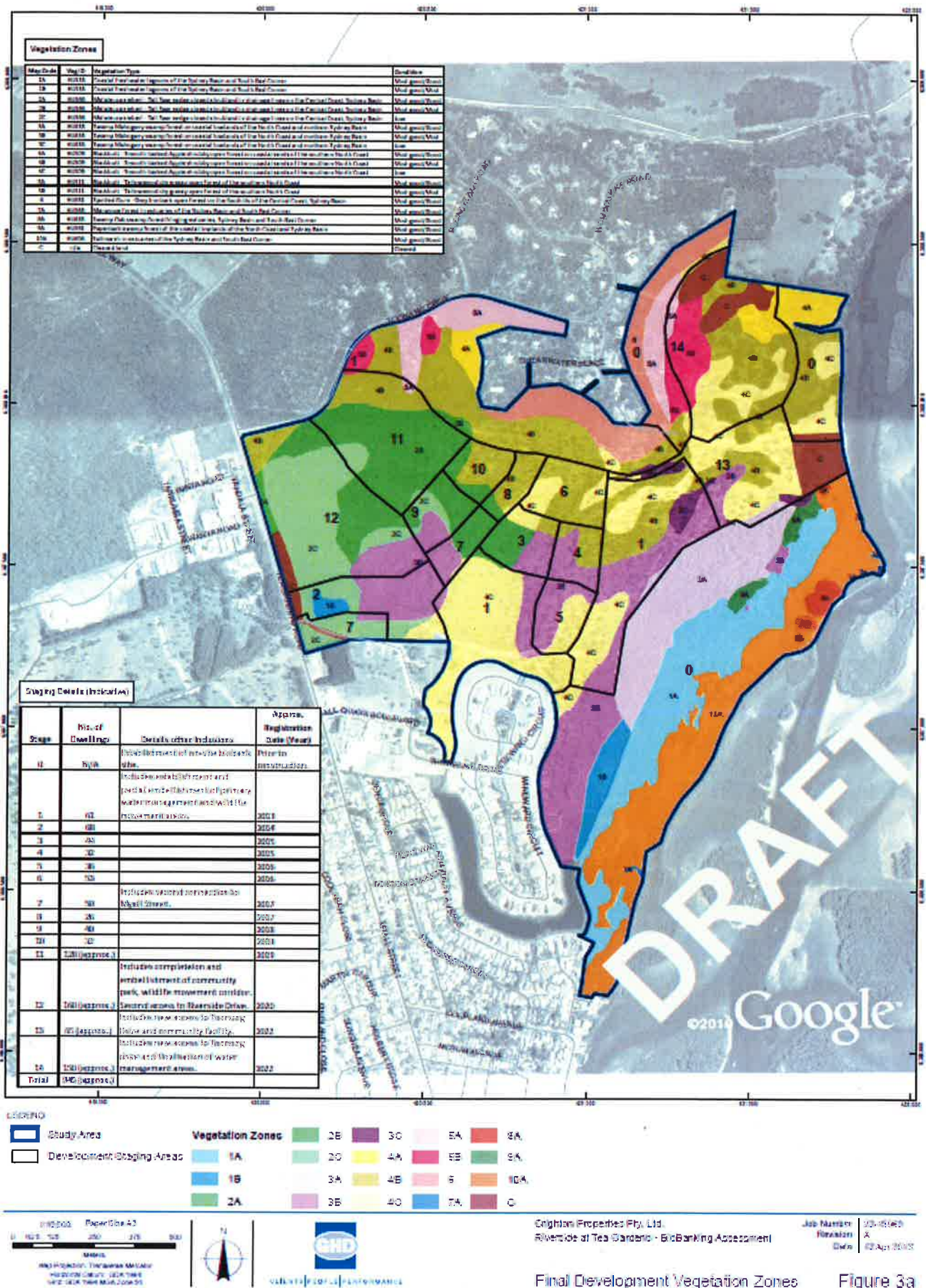
The Great Lakes LGA is listed in Schedule 1 as an LGA to which SEPP 44 – Koala Habitat Protection applies. As a result of this, and given that the subject land is greater than one hectare, the subject land is required to be assessed for potential core koala habitat. Potential Koala habitat is defined as “an area of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component”. Core Koala habitat is defined as an “area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population”.

The aim of SEPP 44 – Koala Habitat Protection is to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline. Under the SEPP, if it is determined that the subject land comprises core koala habitat, a Koala Plan of Management must be prepared prior to consent for the development being granted.

As illustrated on **Figure 22**, a large portion of the site is dominated by Koala feed species listed under SEPP 44. *Eucalyptus robusta* (Swamp Mahogany), *Eucalyptus microcorys* (Tallowwood), *Eucalyptus signata* (Northern Scribbly Gum), *Eucalyptus punctata* (Grey Gum) and *Eucalyptus tereticornis* (Forest Red Gum) have all been recorded on the subject site. Given that these species occupy greater than 15% of the canopy cover, the subject site is defined as ‘potential Koala habitat’ under SEPP 44.

The site currently supports 120.68 ha of Koala Habitat (Refer **Figure 21**). Of this the proposed development will result in the loss of approximately 57.65 hectares (47%) of vegetation from the site which constitutes Koala habitat. In order to compensate for this loss, the conservation off-set lands required to be provided under the Biobanking Assessment must contain good quality Koala habitat. As noted in **Section 5.2.3** the Biobanking offset package proposed by the proponent requires the conservation of land (both onsite and offsite) ‘in perpetuity’ to compensate for the impacts of the proposed development on fauna habitat. It is noted that the 57.65 hectares of Koala habitat to be retained on-site is in better condition than the habitat being removed.

Figure 22 - Vegetation Zones (prepared by GHD)



The department, Council and OEHL is of the view that provided the off-site conservation land is located within the Tea Gardens/Hawks Nest Area and contains good quality habitat for Koalas, the potential impact on Koalas will be adequately mitigated. With regard to the location of the off-site conservation land, Great Lakes Council has requested that *"Off-site offsets be located in a manner that strategically contributes to the protection and recovery of the Endangered Koala Population of Hawks Nest and Tea Gardens and be within the Great Lakes LGA."* OEHL have also specified that *"all off-site offsets are provided within the Great Lakes local government area and specifically within the habitat area for the Hawks Nest and Tea Gardens endangered koala population."* An appropriate requirement has therefore been included in the Instrument of Approval requiring that the offsite offset to be provided within Great Lakes LGA.

Impact on Wallum Froglet

The Wallum Froglet has been recorded extensively across the site, with **Figure 21** identifying where the Wallum Froglet habitat currently exists. The species is known to inhabit coastal floodplain wetlands, coastal swamp forests, wallum sedgeland and rushland, wet heath and shrubland and dry Wallum heath.

The Wallum Froglet requires high water quality and a pH in the acid range within the swamps and wetland areas which it inhabits. On-site habitat includes drainage lines and low lying wet pasture areas as well as heath, sedge/rushland and forested wetlands. The main threats to the species from this proposal are removal of habitat through residential development, changes to water quality and quantity and pH, and fragmentation of habitat.

The department is of the opinion that, whilst some habitat will be removed as a result of the project, an extensive area of habitat for the Wallum Froglet will still be adequately protected within conservation lands proposed within the biodiversity offset sites. The on-site conservation lands will continue to provide refuge and breeding habitat for the Wallum Froglet post-development; and therefore the project will not have a significant detrimental impact on the remaining population of the species. Furthermore, the construction of bio-retention swales and wetland areas within the subdivision design will provide for additional habitat area and resources for the species.

Impacts on the Wallum froglet will also be mitigated to an acceptable level through controls on water quality, pesticide use and domestic animals along with the minimisation of light spill, traffic calming and habitat restoration to be implemented as part of a future Threatened Species Management Action Plan (MAP).

5.2.5 Management Plans

The department has recommended implementing a series of management plans and strategies to manage and mitigate the potential impacts of development in relation to the management of vegetation; threatened species; koalas; feral animals, and weeds.

The department recommends that future applications for each stage of development include management plans providing details on implementation of works, measurable performance criteria and monitoring, reporting and adaptive management procedures. It is important that the results of monitoring feed back into adaptive management procedures.

5.3 TOURIST PRECINCT AND FUTURE DEVELOPMENT SITE

Concerns were raised in public submissions that the use of the 'future development site' in the north-east of the concept plan site should be included within the application; and that this area may be proposed for use as a large scale marina facility. The department, Marine Parks and the EPA also raised concerns about the potential impact of the proposed use on the riparian corridor, hollow bearing trees and the Myall River bank.

In order to address these concerns the concept plan was revised to now include open space, conservation, tourist lodges, cabins, permanent residences and associated board walk/boating hire facilities and a jetty (See **Figure 23**). The density for the proposed tourist precinct is proposed to be 6.5 dwellings per hectare, which is half the density proposed for the residential lots. There is no proposal for a marina facility in the current application.

Figure 23 - Proposed tourist and associated uses
(refer also to Figure 12 for location of tourist precinct within the Concept Plan)



Limited information is provided in the PPR in relation to the proposed tourist precinct, particularly in relation to its impact on the riparian corridor and the Myall River bank. Great Lakes Council has also requested by letter dated 8 March 2013 various changes to the tourist precinct, including the relocation of the proposed swimming pool from the 7(b) zoned land, appropriate pedestrian linkages along the foreshore and the revegetation of the 7(b) zoned land with native plant species

The plans for the tourist development are conceptual footprints only and additional information would be required to fully assess the impact of this development. There are a number of environmentally sensitive features within this precinct such as an Aboriginal midden, a number of hollow bearing trees, a watercourse, swamp sclerophyll forest (which is an EEC) and the adjoining SEPP 14 wetlands. Given the environmentally sensitive nature of this part of the site due largely to its proximity to the Myall River and associated wetlands, the layout and building footprints proposed in the tourist precinct are therefore not to be approved. The owner of this part of the site (Geoffrey Cox) has indicated that it was not intended that concept approval for the specific building envelopes (as shown above) be given, and the proposal was merely for the use of the land as a tourist precinct.

In principle the department has no objection to an eco-tourist type facility and some limited residential development in this location, provided its impacts are addressed in any future development application.

The use of Precinct 13 for an eco-tourist facility⁴ is therefore recommended, subject to the following modifications to the concept plan regarding the siting and use of buildings:

⁴ **eco-tourist facility** means a building or place that:

- (a) provides temporary or short-term accommodation to visitors on a commercial basis, and
- (b) is located in or adjacent to an area with special ecological or cultural features, and
- (c) is sensitively designed and located so as to minimise bulk, scale and overall physical footprint and any ecological or visual impact.

- There is a minimum buffer of 20m from any building to the water feature located within the circular roadway;
- There is a minimum 20m radius to the existing hollow bearing trees;
- There is a minimum 50m vegetated buffer to the nearby wetlands; and
- Any hollow bearing trees to be removed are to be replaced with nest boxes at a ratio of 2:1, located within the on-site conservation lands elsewhere on the site;

Under the definition of eco-tourist facility, residential use would not be permitted, however, the provision of ten dwellings in this area is supported, provided they will be relocated to the less sensitive northern part of the precinct, adjacent to the residential development in Stage 14.

The approval will also not include the building footprints shown on Plan RC-03 dated November 2012 are not approved, for clarification.

In addition, Mr Cox has indicated that the use of a building in the precinct for a conference centre is part of the vision for this part of the site, such that the viability of the tourist cabins can be strengthened by allowing conferences and seminars to be held. The definition of eco-tourist facility does not allow a conference centre, this being separately defined in the Standard instrument. However, a small scale ancillary use of the tourist precinct in this manner is supported in principle, subject to further assessment at the DA stage. Therefore, the Term of Approval will note that the ancillary use for a small scale conference centre is a permissible use.

It is also noted that these provisions need to be specifically outlined in the approval and will prevail over the existing and future zoning of the site.

Appropriate terms of approval have been recommended as outlined above, which modify the concept plan to reflect the above parameters and provide future environmental assessment requirements for the tourist precinct.

5.4 BUSHFIRE

The subject site is identified as bushfire prone land in the Great Lakes Council Bushfire Prone Land Maps and is categorised as having a Forest Fire Danger Index (FDI) of 80. The Rural Fire Service (RFS) has provided a number of conditions requiring that Asset Protection Zones, provision of utilities, public roads and fire trails should comply with Planning for Bushfire Protection 2006 (PBP). In the PPR the proponent has updated the Statement of Commitments to commit to managing bushfire risk in accordance with the PBP.

A revised Bushfire Threat Assessment (BTA) submitted with the PPR has also been prepared by Conacher Environmental which demonstrates that the proposed bushfire protection measures are in accordance with RFS requirements.

The department is of the opinion that bushfire planning measures have been adequately addressed for the concept plan and that further detailed design will be required at development application stage. As all required APZs can be accommodated on-site and the access roads will comply with relevant requirements, the department is satisfied that the bushfire risk on the site can be adequately managed. Future development applications for subdivision will need to assess bushfire risk.

In this regard the proponent has committed to preparing a Bushfire Management Plan to be prepared and lodged with any future development application which is consistent with the Bushfire Threat Assessment. These commitments are reflected in the recommended instrument of approval.

5.6 TRAFFIC, ACCESS AND PUBLIC TRANSPORT

5.6.1 Traffic and Access

Vehicular access to the site is currently available from Myall Street, Toonang Drive and Myall Quays Boulevard. Myall Street is the main road link from the villages of Tea Gardens and Hawks Nest to the Pacific Highway. The proposed development will generate traffic that will impact on this existing road network.

Public and agency submissions raised concern that previous traffic data was out of date, additional modelling of further intersections was required, preferred bus/pedestrian/cycle arrangements and road design standards were not indicated, and recommendations were made for the replacement of the two main roundabouts with signalised intersection control.

The proponent's traffic report concludes that the existing road system beyond the site is able to cater for the traffic demands of the proposed residential development. It further concludes that the existing intersection control at Myall Quays Boulevard and Myall Street when combined with a second intersection on Myall Street, together with access to Toonang Drive can accommodate the total number of lots proposed under the Concept Plan (refer **Figure 24**).

The following commitments are made by the proponent to minimise traffic impacts:

- Signalised controls are to be provided at the intersections of Myall Street and Myall Quays Boulevard and the new (unnamed) access road to Myall Street, prior to the issue of the subdivision certificate for the 500th lot;
- The Intersection of Toonang Drive will be upgraded to a seagull type intersection in consultation with Council / RMS prior to the issue of the subdivision certificate for the 700th Lot or when a connection is made to Toonang Drive (whichever is the earlier);
- Pedestrian crossing facilities and refuges shall be provided on Myall Street as part of intersection design; and
- Bus stop and shelter facilities are to be provided along both sides of Myall Street adjacent to safe pedestrian crossing facilities.

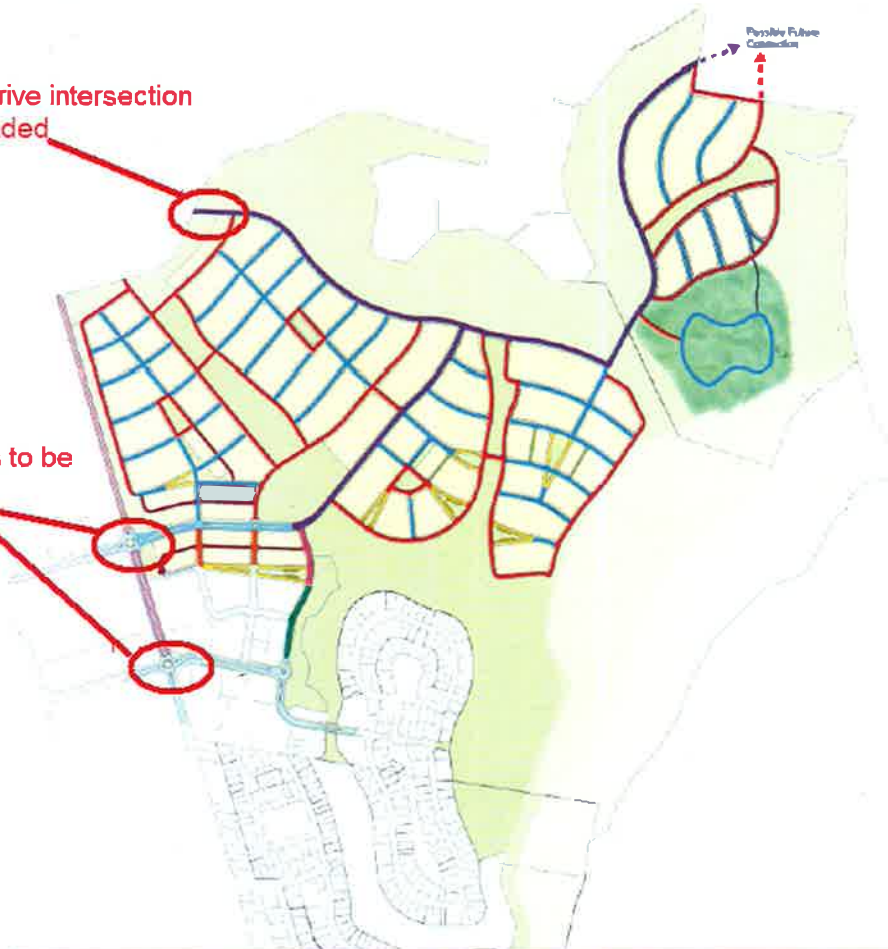
RMS has raised no objection to the proposed Concept Plan provided the commitments made by the proponent are complied with. The provision of signalised intersections at Myall Quays Boulevard and the second Myall Street connection is supported by RMS as it *"would provide a safer environment for pedestrians and cyclist movements particularly with the potential Myall River Downs development west of Myall Street."* The department is therefore satisfied that the traffic impacts of the proposal are acceptable subject to additional requirements including the above commitments and the recommendations of RMS.

Figure 24 - Proposed Road Network



Toonang Drive intersection to be upgraded

Myall Street intersections to be upgraded



ROAD TYPES	DETAILS
Arterial R1	Road 10m 4m median, green space & development
Arterial R2	Road 14m 5m median, green space & development
Collector	Road 7.5m 3m median, development both sides
Secondary Arterial R1	Road 10m 1.5m 2m 4m 4m development both sides
Secondary Arterial R2	Road 12m 1.5m 2m 4m 4m green space & development
Secondary Arterial R3	Road 12m 1.5m 2m 4m 4m green space & development
Local Road R1	Road 6m, development both sides
Local Road R2	Road 4m, green space & development
Local R1	Road 7.5m, development both sides
Local R2	Road 7.5m, green space & development
One Way	Road 6m, development both sides
Access Way	Local 7.5m median, 3.5m road
Local Way	Local 6m reserve, 2.5m road
Drain File Trail	on site access (no permanent vehicular access)
Existing Roads	Existing RA
Intersection 1	Intersection to be upgraded to roundabout as required by development of Myall River Domain
Intersection 2	Roundabout to be provided at intersection as required by development of Myall River Domain

Riverside at Tea Gardens Australia

STREET HIERARCHY PLAN

0m 500m

Part 3a Submission to NSW D.D.P.

October 2010 1:8000 g:A1 R.C.-45 L

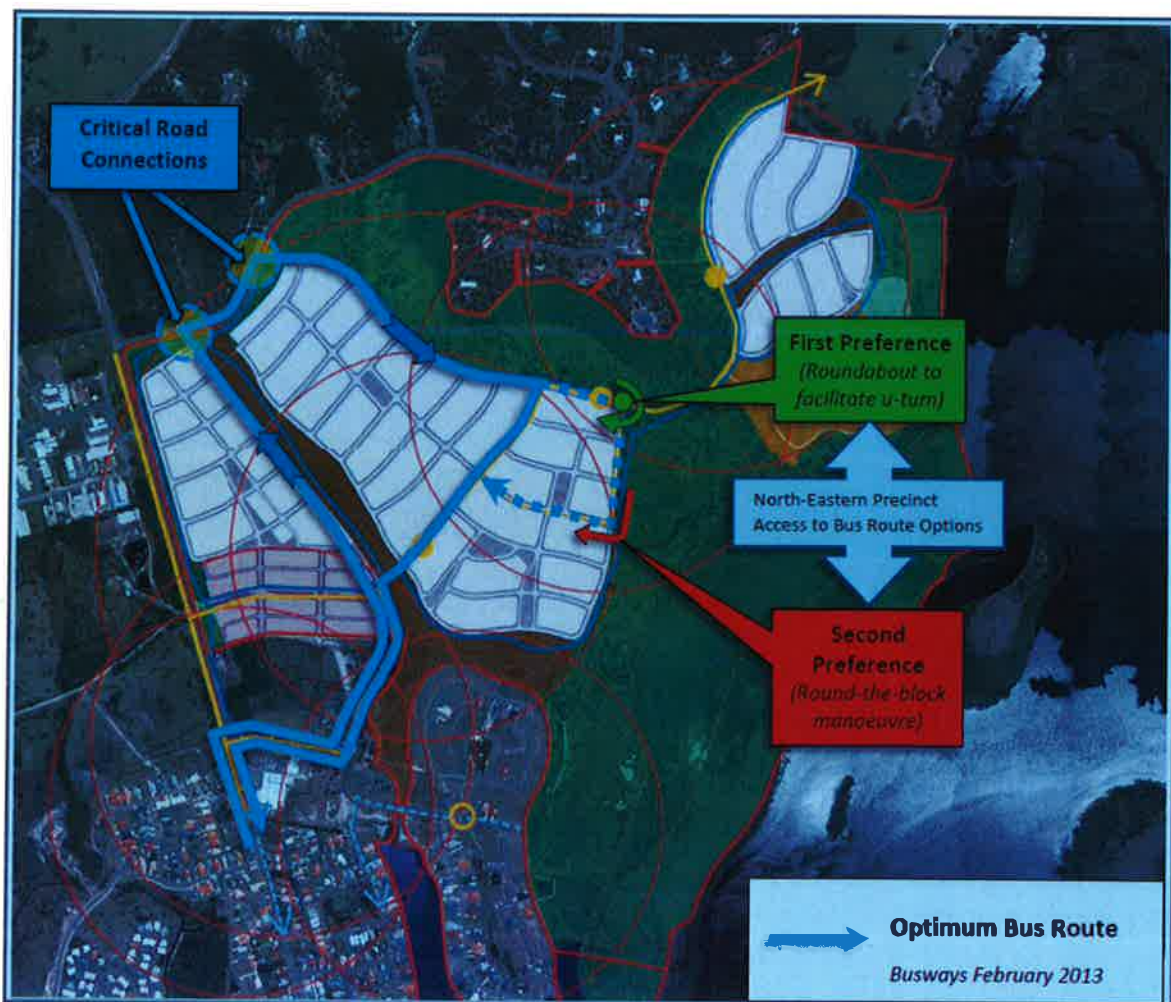
5.6.2 Pedestrian and Cycle Access and Public Transport

A bus route has been proposed as part of the Concept Plan. The site is currently not serviced by public transport as it is outside of the local bus contract region operating within Tea Gardens. The proposed bus route ensures that at least 90% of homes are located within 400 metres of a straight line distance of a bus route. Cycleways and off-road pedestrian footpaths have also been incorporated into the Concept Plan.

Busways has provided a submission to the PPR stating that the proposed bus route requires amendment and has included "a suggested bus route that will adequately serve the community – especially in providing a two-way link to their local precinct hub." (Refer to **Figure 25**). The Busway's submission also notes that "Critical to this are appropriate road network connections to Toonang Dr at two points."

The department considers that the proposal can adequately accommodate public transport. However, a general bus route should be provided with the first development application for the site detailing the proposed route for the whole site incorporating Busway's recommendations. It is considered acceptable for detailed design of bus stop locations, footpaths and cycleways to be done at future development application stages and an appropriate requirement has been included to that effect.

Figure 25 - Suggested bus routes provided by Busways



5.7 INFRASTRUCTURE AND DEVELOPMENT CONTRIBUTIONS

As this is a concept plan application and no physical works can be approved, development contributions cannot be directly levied for the project at this stage. However, as part of its strategic assessment of the project the proponent has commissioned a number of studies into the development contributions that may apply to a development of this scale in this area including a Review of s93 and s94 requirements – Crighton Properties prepared by Connell Wagner in March 2007, and the Riverside at Tea Gardens Recreation Study completed by ERM in December 2011. These reports identify the demand for, scope of, and nature of likely contributions required to cater for the projected population and the likely characteristics of that population. However, development contributions will be dealt with in detail at the development application stage.

A draft Voluntary Planning Agreement (VPA) was exhibited with the application, which proposed to provide certain facilities in the form of playing fields and undertake road works. However as part of the site is in receivership and a new owner needs to be secured, it is not possible to reach agreement on these contributions at this time.

Notwithstanding that the VPA can not be finalised at this stage, the proponent will still be required to pay section 94 monetary contributions at development application stage. The proponent has included a commitment in relation to the payment of Section 94 to the Council, in accordance with the Council's Section 94 Plan.

Given this, the department is satisfied that through the commitments made by the proponent and the recommended provisions of the concept plan instrument of approval, adequate assurances are in place to ensure the delivery of required local and regional infrastructure and open space in a timely manner.

5.8 OTHER ISSUES

5.8.1 Subdivision Staging

The proposal involves a community title subdivision of the site over 14 development stages. Given the size of the project it is likely that these stages will develop over the next 20-25 years. To ensure that the impact of the development is minimised, it is recommended that works associated with the proposed subdivision such as clearing, earthworks/filling are to occur in stages, rather than allowing the clearing/filling of the whole site during the initial stages of the development. Therefore a recommended modification to the concept plan has been included, requiring the proposed clearing and earthworks to occur in stages, commensurate with each development stage.

5.8.2 Subdivision Layout

At a landscape scale any future buildings within the subdivision must be consistent with the Coastal Design Guidelines, regional view corridors, and views from the Myall River. The design of the proposed subdivision responds to unique features, both internal and external to the site, so that it integrates visually into the landscape context. Open space corridors have been created along view lines. Tree planting along the open space corridors will reinforce the regional view corridors.

The design and layout of the estate will be enhanced by the selection of native vegetation and designated setbacks from Myall Street internal road layout and character will be addressed at the development application stage. A detailed landscape strategy will also be submitted with future development applications. All of these matters have been incorporated in the recommended instrument of approval as future environmental assessment requirements.

5.8.3 Keeping of cats

Submissions were received from both the public and government agencies raising concerns in relation to the impact of the development on threatened flora and fauna species which are known to occur on the site. To ensure the effective management of impacts resulting from urban development and to enhance the prospect of survival of threatened species, a recommended term of the concept plan approval is to prohibit the keeping of cats on the site. A positive covenant under Section 88B of the Conveyancing Act 1919, to this effect, shall be placed on the title of all future lots. This covenant shall only be released with the approval of Great Lakes Council.

5.8.4 Aboriginal cultural heritage

Investigative studies have identified two known archaeological sites known as 'Riverside_01 midden' and the 'Dredge Island midden'. Both sites are located on the raised sand dune landform near the Myall River and neither will be directly impacted by the development. Dredge Island midden is located adjacent to the Myall River within the SEPP 14 wetland, while the Riverside_01 midden is located on the immediate southern border of the tourist precinct and will be protected by a 10m buffer. The two middens will be protected from all development activities.

As the two middens have social and cultural significance, to protect Aboriginal cultural heritage, the department recommends that during ground surface disturbance works in the event that cultural heritage material is exposed within the development area, all development works will immediately cease and a representative of the OEH and Karuah LALC will be contacted regarding further assessment of any cultural materials. Management measures as outlined in the Management Plan to be prepared would also be implemented for the proposed works.

A detailed cultural heritage management plan (CHMP) will be required to be developed in consultation with local Aboriginal stakeholders and OEH and will include provisions such as conservation, fencing, interpretation and education, and walkways etc.

Subject to the recommended conditions the department is satisfied that the integrity of the aboriginal cultural heritage on the site can be protected.

5.8.5 Capacity of water and sewerage infrastructure

The total ultimate sewage generation (4.4ML/day) is greater than the future planned capacity of the Hawks Nest Sewage Treatment Plant (STP) at 3.6ML/day). This means the STP requires an upgrade to cater for the proposed development. The department notes that Mid Coast Water has endorsed the Integrated Water Cycle Management Plan submitted with the EA and is effectively satisfied with the ultimate effluent disposal capacity, subject to requirements seeking certainty that satisfactory arrangements have been made for the provision of water and sewer services prior to works commencing.

It is recommended to impose a requirement for the installation of a reticulation pipeline system throughout the subdivision which is capable to service each dwelling. Each residential lot will be provided with reticulated water supply, sewerage and underground electricity, prior to the release of the Subdivision Certificate for each stage. In addition a recycled water supply will be provided in accordance with the IWCMS.

5.8.6 Contamination

A Phase 1 Environmental Site Assessment was undertaken and submitted with the EA. This assessment concluded that the site was "*assessed as being free of potential contaminants likely to have a significant adverse impact on human health or the environment.*" The site, although disturbed in parts by former use as a commercial pine plantation, is currently free from development and no evidence of former development was noted in the Phase 1 assessment. The assessment acknowledges that as the site is largely uncontrolled it cannot be discounted that illegal dumping of potentially contaminating materials has occurred on isolated parts of the site.

Based on the Phase 1 assessment the potential for existing site contamination is considered however to be low and if encountered contamination is likely to be limited in extent to localized zones within the site. Any potential localized contamination on site will need to be identified and appropriate mitigation measures proposed in accordance with the provisions of SEPP 55 – Remediation of Land. This matter is to be included as a future environmental assessment requirement to be addressed in future development applications.

5.8.7 Tea Gardens Quarry

The site is in close proximity to Tea Gardens Quarry operated by Hunter Quarries Pty. Ltd. The area around the quarry is partially covered by a transition area which indicates the area around the operation which may be subject to impacts from the quarry. A submission from the Department of Trade and Investment states that in order for any development to proceed, the consent authority should satisfy itself that proposed residential zones would not be subject to significant impacts (such as noise, vibration, dust and heavy vehicular movements) from the quarrying operation. The submission also states that the proponent would also need to demonstrate that the presence of residential development would not restrict extraction operations of the quarry.

The subject quarry is located in a valley on the north western side of a steep ridge which physically separates the quarry from the subject site. In the department's view, given the substantial separation distance, noise, traffic and dust impacts are not considered to be a material issue and it is considered that the proposed development would not restrict extraction operations from the quarry.

5.8.8 Acid Sulfate Soils

The site is known to be affected by acid sulfate soils (ASS). As such Coffey Geotechnics prepared an ASS Assessment and a generic Acid Sulfate Soils (ASS) Management Plan. This generic plan is to be provided as a reference to individual lot purchasers and contractors required to work on the site to assist in controlling and managing ASS during the development of each lot. A commitment has been made that any earthworks proposed for the site within any development application will be accompanied by an Acid Sulfate Soil Management Plan which is consistent with the Construction Environmental Management Plan (CEMP) for the site.

The department is of the opinion that ASS issues have been adequately addressed for Concept Plan stage and that further detailed design measures will be required at development application stage. A requirement for a detailed comprehensive ASS assessment and ASSMP to be submitted with the first development application for subdivision or earthworks has been included in the recommended Concept Plan Instrument of Approval.

6. CONCLUSION AND RECOMMENDATION

This subdivision project, with a construction investment value of approximately \$73,147,850 million will provide significant benefits in providing housing on the Mid North Coast of NSW while achieving other key priorities outlined in the Regional Strategy such as protecting native vegetation, biodiversity, sensitive lands and coastal waterways. The project will also provide construction employment opportunities and provide the local area with an increased housing choice.

Importantly, the project design and recommended term of approval will guide development of the site and ensure the protection of sensitive vegetation and species habitat and provision of wildlife corridors so that it is not significantly impacted upon by the provision of housing.

The staging of the development over 14 stages allows a measure of flexibility in the project's implementation, including staged intersection improvements. This will allow for the implementation of infrastructure such as the various public parks, bus routes, roads, roundabouts and traffic signals to appropriately match the accumulating needs of the development of the stage lots.

The department has assessed the proposal on its merits and considered the submissions received during the public exhibition period. The key issues raised in the submissions were in relation to appropriate development footprint; flooding and stormwater management; Aboriginal cultural heritage; impacts on biodiversity; impact on wetlands and EECs and potential bushfire hazard. The department has considered the issues associated with the project and a number of conditions are recommended in conjunction with the proponent's Statement of Commitments to ensure any detrimental impacts of the proposal are avoided or appropriately mitigated.

Since the earlier 2006 Concept Plan and Project Application considered by the PAC, the proposal has been subject to further detailed assessment/studies and considerable scrutiny by government agencies which has resulted in:

- a reduced development footprint;
- an increase in the area of the site to be set aside for conservation (and management);
- an increase in wildlife corridor widths;
- development of an integrated water management strategy for the site which incorporates WSUD measures; and
- development of a biodiversity offsetting package in consultation with OEH, which proposes the provision of on-site and off-site conservation lands.

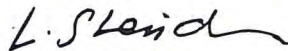
The department considers that the project modifications as outlined in the Preferred Project Report, including a revised site layout with a reduced number of lots and improved integrated water management system is a beneficial outcome for the Riverside site. The development of the Riverside site for predominantly residential development is consistent with the Mid North Coast Regional Strategy 2006 and NSW 2021. It also allows an opportunity, consistent with the *Coastal Design Guidelines for NSW 2003* to consolidate urban growth close to the town centre and existing infrastructure, upgrade and provide for new pedestrian and traffic connections, whilst maintaining and regenerating degraded natural assets including waterways, groundwater and ecological communities.

On these grounds, the department considers the proposal will achieve a good level of environmental performance and is in the public interest. Consequently, the department recommends that the project be approved, subject to recommended future environmental assessment requirements and the proponent's Statement of Commitments.

Of particular note is the required provision of on-site and offsite offsets to be secured by a future banking agreement with the council and/or OEH. As the full details of the agreements, particularly the location of the off-site offsets has not yet been determined, in accordance with section 75P(5) of the Act, Term of Approval A5 of the concept plan provides that final concept approval is not given until the Director-General is satisfied with the arrangements for securing the offsets for the various stages. To facilitate this, a subdivision to excise the on-site conservation lands and identify them as separate parcels has been recommended. No further environmental assessment of the subdivision is required under section 75P(1)(c) and project approval is recommended under section 75P of the Act.

The department considers the land to be suitable for the proposed subdivision and urban (residential and tourist) use and recommends the **concept approval** and **project approval** for the subdivision to excise conservation lands, subject to the recommended Terms of Approval.

Prepared by: **Lynne Sheridan**



**Senior Planner
Metropolitan and Regional Projects North**



**Heather Warton
Director
Metropolitan and Regional Projects North**



**Chris Wilson
Executive Director
Development Assessment Systems & Approvals**

APPENDIX A ENVIRONMENTAL ASSESSMENT AND PPR

SEE THE DEPARTMENT'S WEBSITE AT <http://majorprojects.planning.nsw.gov.au/>

**APPENDIX B RESPONSE TO SUBMISSIONS / PREFERRED
PROJECT REPORT**

SEE THE DEPARTMENT'S WEBSITE AT <http://majorprojects.planning.nsw.gov.au/>

APPENDIX C ENVIRONMENTAL PLANNING INSTRUMENTS

1. STATE ENVIRONMENTAL PLANNING POLICIES

The proposal has been considered against the following State Environmental Planning Policies and is considered to be generally in compliance with the provisions contained within the following:

State Environmental Planning Policy No. 14 – Coastal Wetlands

The aim of *State Environmental Planning Policy No. 14 – Coastal Wetlands* (SEPP 14 – Coastal Wetlands) is to ensure that coastal wetlands are protected from clearing, draining, filling and levee construction and are preserved in the environmental and economic interests of the State. The subject site contains a small portion of SEPP 14 – Coastal Wetlands (No. 439) within the site's north-eastern corner. The department has considered the potential impacts of the proposal on existing coastal wetlands within and adjoining the site. Requirements to ensure protection of wetland areas include; the preparation of a comprehensive Vegetation Management Plan for 7(a) and 7(b) zoned land; incorporation of best practice water sensitive urban design features; and, the establishment of a 50 m vegetated buffer between the wetland areas and any physical works.

State Environmental Planning Policy No. 71 – Coastal Protection

State Environmental Planning Policy 71 – Coastal Protection (SEPP 71 – Coastal Protection) applies to land within the coastal zone. It aims to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast. The provisions of SEPP 71 – Coastal Protection have been considered in the assessment of the proposal, particularly in regards to the management of likely impacts of development on the water quality of coastal water bodies. The proponent is required to prepare a comprehensive Vegetation Management Plan in order to provide protection of the existing SEPP 14 – Coastal Wetlands within the site.

State Environmental Planning Policy (Affordable Rental Housing) 2009

The proposal is for a mix of lot sizes and dwelling types including the potential for dual occupancy. This will provide housing choice for a range of segments of the housing market. Future applications for subdivision demonstrate must that the Neighbourhood Planning Principles outlined in the Mid North Coast Regional Strategy have been addressed and that consideration has been given to provision for affordable rental housing making use of the incentives provided under the *SEPP (Affordable Rental Housing) 2009*.

Great Lakes Local Environmental Plan 1996

The Great Lakes Local Environmental Plan 1996 is the planning framework for development within the Great Lakes LGA and establishes zonings and permissible development.

The subject site was rezoned in June 2000 under Amendment 5 to the LEP and now has the following zonings under the *Great Lakes Local Environmental Plan 1996* ("Great Lakes LEP"):

- Zone No 2 (f) (Mixed Residential-Commercial Zone)
- Zone No 7 (a) (Wetlands and Littoral Rainforest Zone)
- Zone No 7 (b) (Conservation Zone)

The majority of the site is zoned 2(f), while the 7(a) portion comprises the SEPP 14 wetland adjoining the Myall River. The 7(b) zone forms the buffer to the wetland. Development proposed in the 2(f) zone includes residential and tourist development and community title subdivision which are permissible in the zone. There is no development proposed in either the 7(a) or the 7(b) zone, apart from the proposed jetty, boardwalk and associated recreational facilities for the tourist precinct which are within the 7(b) zone and are permissible with consent.

Great Lakes Draft Local Environmental Plan 2012

Great Lakes Council publicly exhibited their draft Standard Instrument LEP between 14 June and 14 August 2012. Council is now in the process of reviewing submissions made on the draft LEP and finalising the mapping. It is considered likely that the first development application lodged for this site will be lodged under the provisions of the new LEP.

The proposed zonings for the Riverside Site are as follows:

- Zone R2 (Low Density Residential);
- Zone E2 (Environmental Conservation);and
- Zone E3 (Environmental Management).

The proposed residential development is permissible under the Draft Great Lakes LEP 2012, although the tourist facility would not be permissible under the proposed R2 Zone. Notwithstanding, the concept plan will override any inconsistency with the current and draft LEP

2. OTHER ENVIRONMENTAL PLANNING INSTRUMENTS & POLICIES

The Proposal has been considered against the following non-statutory documents and is considered to be generally in compliance with the provisions contained within these documents:

North Coast Regional Environmental Plan

The North Coast Regional Environmental Plan (North Coast REP) provides a framework for policy preparation for the North Coast region and specifies objectives for the future planning and development of land throughout the NSW north coast. The proposal is generally consistent with the provisions of the North Coast REP, in particular the objectives of Part 4 – Urban Development, which aims to provide for the orderly and economic release of urban land; and Part 4, Division 2 – Urban Housing which aims to promote the provision of a range of adequate, affordable and suitable housing to meet the needs of the region's population.

Mid North Coast Regional Strategy 2006

The Mid North Coast Regional Strategy (the Strategy) provides the framework in order to balance competing considerations of the region in a sustainable manner over a 25 year timeframe. The Strategy outlines a planned approach to appropriately deliver land for residential housing and jobs growth; while at the same time protecting areas of high environmental and conservation value. Tea Gardens is identified in the Strategy as a future growth area within the Great Lakes LGA.

NSW Coastal Policy 1997

The NSW Coastal Policy 1997 (the policy) provides for the coordinated management of the coast's unique physical, ecological, cultural and economic attributes to ensure an ecologically sustainable coastline. The provisions contained within the policy have been considered during assessment of the proposal.

Myall Quays Estate DCP 22

Myall Quays Estate DCP 22 applies to the subject site and surrounding land known as Myall Quays. The DCP was prepared in conjunction with Amendment 5 to Great Lakes LEP 1996, when the subject site was rezoned for urban development. The DCP was designed to provide a framework for development on the site including a range of residential lots and tourist development.

The proposal is considered to be consistent with the DCP which aims *"to provide an opportunity for tourist facilities to be developed in conjunction with residential development."* and *"to ensure the most appropriate and efficient use or management of land and natural resources, including for the protection of biodiversity, including threatened species and their habitats."*

The DCP requires the long term conservation of the SEPP 14 wetlands and *"a buffer of 150 metres along the Myall River frontage which is to be managed for public recreation and nature conservation."* The DCP also requires the preservation of native vegetation and fauna habitat, including *"the provision of an east west movement corridor for wildlife"* for dispersion across the site and *"for enhancement of remnant vegetation and habitat values on the site."*

In recognition of the above important elements and objectives of the DCP, the Concept Plan seeks to preserve the SEPP 14 wetlands, provide for wildlife corridors through the site and conserve native vegetation and EECs through the provision of on-site and off-site conservation lands via a Biobanking Agreement, which has been prepared in consultation with OEH, Council and DoPI.

**APPENDIX D DIRECTOR-GENERAL'S ENVIRONMENTAL
ASSESSMENT REQUIREMENTS**

DIRECTOR-GENERAL'S REQUIREMENTS

ENVIRONMENTAL

ASSESSMENT

Section 75F of the *Environmental Planning and Assessment Act 1979*

Application number
MP 10_0136
Project
Concept Plan for a mixed use Residential and Tourist development
Location
Pt Lot 1, Lot 10 and Lot 34 DP270100 Myall Street, Tea Gardens.
Proponent
Crighton Properties Pty Ltd
Date issued
October 2010.
General requirements
<u>PART A : Concept Plan Application</u>
The Environmental Assessment (EA) for the Concept Plan Application must include:
<ol style="list-style-type: none">1. An executive summary;2. An outline of the scope of the project including:<ol style="list-style-type: none">(i) Any development options;(ii) Justification for the project taking into consideration any environmental impacts of the project, the suitability of the site and whether the project is in the public interest;(iii) Justification for any departure of the development footprint from the areas identified by the Planning Assessment Commission (PAC) as 'developable with constraints';(iv) Outline of the staged implementation of the project;3. A detailed response to all issues raised by the PAC;4. A thorough site analysis and description of existing environment;5. Accurate mapping of zones for the site and surrounds, overlaid on the site survey plan;6. Consideration of any relevant statutory and non-statutory requirements and identification of any non-compliances with such provisions, in particular relevant provisions of Environmental Planning Instruments, Regional Strategies (including draft Regional Strategies) and Development Control Plans;7. Consideration of impacts, if any, on matters of national environmental significance under the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>;8. An environmental risk analysis of the project including consideration of the issues raised during consultation;9. An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project;10. The plans and documents outlined in Attachment 2;11. A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading;12. A Quantity Surveyor's certificate of cost to verify the capital investment value of the project; and,13. A detailed assessment of the key issues specified below and a table outlining how and where in the EA document these key issues and the above requirements have been addressed.

Key Issues	
The EA must address the following key issues:	
1. Strategic Planning	
1.1	Justify the proposal with reference to relevant local, regional and State planning strategies. Provide justification for any inconsistencies with these planning strategies.
1.2	The proposal must demonstrate compliance with the provisions of <i>State Environmental Planning Policy No. 71 – Coastal Protection</i> .
1.3	The proposal should not include any elements which would be defined as Canal Estate development as defined in <i>State Environmental Planning Policy No. 50 – Canal Estate Development</i> .
1.4	Demonstrate that the proposed densities are appropriate for the future housing needs of the Tea Gardens area. Demonstrate compliance with the recommendations of the <i>Tea Gardens Housing Strategy (May 2006)</i> particularly relating to affordable housing types and their location.
1.5	Provision of all development consents issued for the subject site and the adjoining site (known as Myall Quays) including the existing detention lake and connection to the Myall River.
1.6	Provision of the Community Management Statement for the existing development adjoining the site, known as Myall Quays.
2. Subdivision Design, Layout and Desired Future Character	
2.1	Demonstrate the consistency of the proposal with the character of existing development in terms of the locality, street frontage, scale, building envelopes and future built form controls, aesthetics, energy and water efficiency and safety.
2.2	Demonstrate the consistency of the proposed subdivision design and layout with the <i>Coastal Design Guidelines for NSW, NSW Coastal Policy 1997</i> and <i>SEPP 71 – Coastal Protection</i> .
2.3	A draft community management statement illustrating the structure and operation of the proposed Community Subdivision is to be provided.
2.4	Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner and identify how the proposal relates to the existing and proposed future stages to ensure an integrated and holistic approach to environmental management;
2.5	Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.
2.6	Address any public access to the shoreline in accordance with the principles of ecologically sustainable development and the NSW Coastal Policy.
2.7	Address safety and security of the proposal and provide mitigation measures where required.
2.8	Demonstrate compliance with relevant zone objectives.
2.9	Demonstrate the application of sound urban design principles in the design of the proposal.
3. Visual Impact	
3.1	Demonstrate suitability of the proposal with the surrounding area in relation to the proposed and potential bulk, scale, amenity (including noise) and visual amenity having regard to the <i>Coastal Design Guidelines of NSW (2003)</i> . In particular, address impacts on the amenity of the foreshore, loss of views from public places and cumulative impacts.
4. Infrastructure Provision	
4.1	Address the capacity of infrastructure to accommodate the proposed development such as water, electricity, gas, telecommunications and their staging. Specific consideration should be given to the capacity of the sewerage treatment facility at Hawks Nest to accommodate the proposal. Identify and describe staging, if any, of infrastructure works.
4.2	In the event that an alternate system is proposed to the effluent management (disposal) system currently proposed, then a risk assessment of effluent disposal, including the potential impacts and relevant mitigation measures in the event of a failure of the effluent disposal system through flood or other events, is to be undertaken.
4.3	Provide details of any Planning Agreements entered into or proposed as part of this

4.4	<p>development and the proposed payment of Section 94 contributions. Note: Any Planning Agreement must be outlined in the Statement of Commitments as an 'offer' under Section 93G of the Act. This should take the form of a draft agreement. Planning Agreements should only contain matters outside of the scope of Section 94;</p> <p>Outline the capacity of the Community Title arrangements to meet the future requirements for infrastructure maintenance and repairs.</p>
5. Traffic and Access	
5.1	Prepare a Traffic Impact Study in accordance with the RTA's Guide to <i>Traffic Generating Developments</i> .
5.2	Protect existing public access to and along the coastal foreshore and provide, where appropriate, new opportunities for controlled public access. Consider access for the disabled, where appropriate.
5.3	<p>Demonstrate compliance with sound urban design principles, including parking, access, and transport. This must demonstrate options, particularly as they relate to access to and from adjoining urban areas, with a view to minimising traffic loads on one or more particular access way. In addition consideration must be given to:</p> <ul style="list-style-type: none"> - pedestrian/cycle access through the site; - public transport access through the site, with particular emphasis on road compatibility for bus access through the site; - intersection capability to withstand anticipated traffic loads; and - a Noise Impact Assessment in accordance with the NSW Environment Protection Authority's 'Industrial Noise Policy' (2000) should be completed. This assessment should identify the likely impact of the existing industrial area upon the proposed residential development and if necessary include methods for noise attenuation. <p>With respect to traffic and access, traffic modelling in accordance with the relevant standards is required.</p>
5.4	Demonstrate the provision of access and servicing links between the subject site and Shearwater Estate (through the Myall Quays site). Consideration of any alternative access requirements of the <i>Great Lakes Hawks Nest/Tea Gardens Conservation and Development Strategy (2003)</i> is also required.
6. Hazard Management and Mitigation	
<i>Coastal Processes</i>	
6.1	Address coastal hazards and the provisions of the <i>Coastline Management Manual</i> , the NSW Department of Environment Climate Change and Water publications; <i>NSW Sea Level Rise Policy Statement</i> , <i>Coastal Risk Management Guide</i> and <i>Flood Risk Management Guide</i> , and the NSW Department of Planning publication; <i>NSW Coastal Planning Guidelines: Adapting to Sea level Rise</i> August 2010. In particular, consider impacts associated with wave and wind action, coastal erosion, sea level rise and more frequent and intense storms in accordance with the principles of ecologically sustainable development and the NSW Coastal Policy
<i>Contamination and Acid Sulfate Soils</i>	
6.2	Address any existing contamination and required remediation of soils on the site. Particular regard must be given to Acid Sulphate Soils on the site, particularly relating to the excavation of these soils. In addition, address the concerns raised by the PAC regarding the management of Acid Sulphate Soils on site.
<i>Bushfire</i>	
6.3	Address the requirements of <i>Planning for Bush Fire Protection 2006</i> , including a Bushfire Plan of Management for all land proposed to be not built on.
<i>Geotechnical</i>	
6.4	Provide an assessment of any geotechnical limitations that may occur on the site and if

necessary, appropriate design considerations that address these limitations.

Flooding

- 6.5 Provide an assessment of any flood risk on site (for the full range of floods including events greater than the design flood, up to probable maximum flood; and from coastal inundation, catchment based flooding or a combination of the two) and having consideration of any relevant provisions of the *NSW Floodplain Development Manual 2005*. The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, address the impact of the development (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event. In addition, address the concerns raised by the PAC regarding the assessment of the impact of flooding under climate change scenarios other than 'minor'.
- 6.6 Assess the potential impacts of sea level rise and an increase in rainfall intensity on the flood regime of the site and adjacent lands with consideration of *Practical Consideration of Climate Change – Floodplain Risk Management Guideline (DECC, October 2007)*.

7. Water Cycle Management

- 7.1 Address potential impacts on the water quality of surface and groundwater during both construction and occupation, having regard to the relevant State Groundwater, Rivers, Wetlands and Estuary Policies. Consideration must be made for water impacts to the Myall River and identified SEPP 14 and RAMSAR Wetlands. Particular regard must be given to how the proposal will minimise altered salinity, pH, litter, weeds, exotic fauna, gross disturbance of these wetlands, nutrient intake to receiving water bodies, and any other issues raised by the PAC relating to groundwater and groundwater ecosystems.
- 7.2 An Integrated Water Cycle Management Plan (IWCMP) based upon Water Sensitive Urban Design principles is required. This must address the requirements of the *NSW Floodplain Management Manual*, water supply, stormwater, sewage, recycling of effluent in an integrated manner, together with further consideration of the STP capacity and consequent infrastructure staging considerations, in consultation with MidCoast Water and DECCW, and must also address the possible inclusion of a reticulated recycled water supply with the IWCMP for the development.
- 7.3 The following impacts are to be assessed for any stormwater management system proposed which involves no extension to the existing lake and no new excavation below the water table: the impact of any large amount of fill material on flooding, fauna and flora; and consideration of the use of recycled water, using nutrient loads based on actual discharges from the Hawks Nest STP, and a worst case assumption of some level of fertilizer use by residents in addition to recycled water.
- 7.4 Stormwater management should be designed to ensure ongoing protection of the groundwater aquifer in accordance with the principles of ANZECC & ARMCANZ: Guidelines for Groundwater Protection in Australia, National Water Quality Management Strategy, Commonwealth of Australia, 1995. Ensure there is no impact on the existing groundwater aquifer and existing groundwater quality resulting from the proposal. Suitably justify the stormwater treatment measures to be used in the proposal.
- 7.5 A Wetland Management Plan is required to guide the rational conservation, management, and restoration of the SEPP 14 wetland habitats and their buffers.
- 7.6 Details of any proposed dredging and reclamation activities including the methods, uses, timing, extent, and duration of works, nature of sediment to be dredged, etc. Specific detail must be provided to outline any activities that may harm marine vegetation, or block the passage of aquatic fauna.

8. Heritage and Archaeology

- 8.1 An Independent Archaeology report must be included in the Environmental Assessment. This must address and document information requirements set out in the draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and *Interim Community Consultation Requirements for Applicants (DEC 2004)*.
- 8.2 Consideration and assessment of the following recommendations of the PAC: provision of further details to confirm the adequacy of the survey sampling in relation to available areas of potential visibility and to further define the extent of Riverside_01; additional definition of the

extent of Riverside_01 and the adequacy of the buffer area to protect this site; the proposed management plan in relation to Riverside_01 must consider the potential for impacts to this site as a result of signage and interpretation for use as an educational resource, in consultation with DECCW and the KLALC; and, clarification of the commitment or otherwise for the KLALC to monitor construction activities and the mechanism to achieve long term protection of any keeping place established as part of this process.

9. Flora and Fauna

- 9.1 Provision of accurate and comprehensive baseline ecological data as described in section 2.6 of the PAC report.
- 9.2 Address the deficiencies in the previous ecological assessment identified in section 2.7 of the PAC report
- 9.3 Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land.
- 9.4 Address measures to protect and manage the SEPP 14 wetland and adjacent aquatic habitats.
- 9.5 Outline and document commercial, recreational, and indigenous fishing activities that may be affected by the proposal. Investigation is required into whether the proposal will impact on the continuing operation and viability of nearby aquaculture or marine culture ventures.
- 9.6 Demonstrate that any water discharge shall meet the benchmark set under the *Oyster Industry Sustainable Aquaculture Strategy*.
- 9.7 Outline measures for the conservation of flora and fauna and their habitats within the meaning of the *Threatened Species Conservation Act 1995*, *Native Vegetation Act, 2003*, and the *Fisheries Management Act, 1994* including, but not limited to Koala populations, and other EECs.
- 9.8 The EA must consider how the proposal has been managed to conserve flora and fauna habitats on the subject site and subject area. The measures proposed to mitigate any effects of the proposal must be provided, including any long term strategies to protect areas within the study area with threatened species. This may include elements that restore or improve habitats. Pre-construction monitoring plans or on-going monitoring of the effectiveness of the mitigation measures must be outlined in detail.
- 9.9 Prepare a detailed flora and fauna assessment for any proposed off-site offset area to enable an adequate assessment to be made of its ecological value and the adequacy of the proposed offset, taking account of '*Principles for use of Biodiversity Offsets in NSW*'. (Note that the PAC concluded that offsets are not appropriate for some of the ecological values of this site and that development should be precluded in some areas to ensure that values are protected.)

10. Socio-economic Impacts

- 10.1 Address social infrastructure including health services and schools. Consultation with service providers, Council, Department of Health, and Department of Education is required. Provide evidence of the capacity to service the proposed development and expected growth in the locality.

Consultation

You should undertake an appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:

(a) *Agencies or other authorities:*

- Great Lakes Council;
- Department of Environment, Climate Change and Water (including the Office of Water);
- Department of Industry and Investment, Division of Primary Industries, Aquatic Habitat Protection Unit;
- NSW Rural Fire Service;
- Land and Property Management Authority;
- NSW Police Service;
- State Emergency Service;
- Hunter & Central Rivers Catchment Management Authority;
- Port Stephens-Great Lakes Marine Parks Authority;
- Local Aboriginal Land Council/s and other Aboriginal community groups; and

- MidCoast Water.

(b) *Public:*

Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy.

The consultation process and the issues raised should be described in the Environmental Assessment.

Deemed Refusal Period

120 days – it is considered to involve a complex environmental assessment and approval process

Attachment B2

Plans and Documents to accompany the Application

<p>6.1 Plans and Documents of the development</p>	<p>The following plans, architectural drawings and diagrams of your proposal as well as the relevant documents will be required to be submitted for your application:</p> <ol style="list-style-type: none"> 1. The existing site survey plan is to be drawn to 1:500 scale (or other appropriate scale) and show: <ul style="list-style-type: none"> • the location of the land, the measurements of the boundaries of the land, the size of the land and north point; • the existing levels of the land in relation to buildings and roads; • location and height of existing structures on the site; and • location and height of adjacent buildings and private open space. 2. An aerial photograph of the subject site with the site boundary superimposed. 3. A Site Analysis Plan must be provided which identifies existing natural elements of the site (including all hazards and constraints), existing vegetation, property dimensions, footpath crossing levels and alignments, existing pedestrian and vehicular access points and other facilities, slope and topography, natural features such as watercourses, rock outcrops, utility services, boundaries, orientation, view corridors and all structures on neighbouring properties where relevant to the application (including windows, driveways etc.). 4. A locality/context plan drawn to 1:500 scale (or other appropriate scale) should be submitted indicating: <ul style="list-style-type: none"> • significant local features such as parks, community facilities and open space, water courses and heritage items; • the location and uses of existing buildings, shopping and employment areas; • traffic and road patterns, pedestrian routes and public transport nodes; and • The existing site plan and locality plan should be supported by a written explanation of the local and site constraints and opportunities revealed through the above documentation. 5. Subdivision plans are to show the following:- <ul style="list-style-type: none"> • The location, boundary dimensions, site area and north point of the land, and names of roads fronting the land; • Title showing the description of the land with lot and DP numbers etc; • Existing and proposed subdivision pattern including all
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	<p>measurements and sites areas of existing and proposed allotments;</p> <ul style="list-style-type: none"> • Location and details of all proposed roads and footpaths; • Location of all structures proposed and retained on site; • Location and details of access points to the subdivision; • Existing vegetation on the land and vegetation to be retained; • Location of services and infrastructure, and proposed methods of draining the land; • Any easements, covenants or other restrictions either existing or proposed on the site; • Type of subdivision proposed (Torrens, strata and/or community title). <p>6. Stormwater Concept Plan - illustrating the concept for stormwater management from the site and must include details of any major overland flow paths through the site and any discharge points to the street drainage system. Where an on-site detention system is required, the type and location must be shown and must be integrated with the proposed landscape design. Site discharge calculations should be provided;</p> <p>7. Earthworks Plan – showing the extent of cutting and/or filling proposed across the site to accommodate all aspects of this development, including but not limited to stormwater management and the creation of building platforms.</p> <p>8. Erosion and Sediment Control Plan – plan or drawing that shows the nature and location of all erosion and sedimentation control measures to be utilised on the site;</p> <p>9. Landscape Concept Plan – plan or drawing that shows the basic detail of planting design and plant species to be used, listing botanical and common names, mature height and spread, number of plants to be utilised and surface treatments (i.e. pavers, lawn etc);</p> <p>10. Construction Management Plan – a plan which outlines traffic and pedestrian management during construction and management of impacts on amenity of adjoining properties and appropriate mitigation measures including noise, dust and sediment and erosion controls;</p> <p>11. View analysis – artist’s impression, photomontages, etc of the proposed development in the context of the surrounding development.</p>
<p>6.2 Specialist advice</p>	<p>Specialist advice, where required to support your Environmental Assessment, must be prepared by suitably qualified and practising consultants in relation to issues including, but not limited to, the following:</p> <ul style="list-style-type: none"> • Flora and Fauna; • Bushfire; • Landscaping; • Geotechnical and/or hydrogeological (groundwater); • Stormwater/drainage; • Urban Design/Architectural; • Contamination in accordance with the requirements of SEPP 55; and • Acid Sulfate Soil Management Plan.
<p>6.3 Documents to be submitted</p>	<ul style="list-style-type: none"> • Both hard copy and electronic versions of the Environmental Assessment will be required to be submitted. Please contact the Department prior to submitting your Environmental Assessment to determine how many copies will be required. • If the Environmental Assessment is bulky, you will be required to package up each Environmental Assessment ready for distribution by the

	Department to key agencies.
Electronic Documents	Electronic documents presented to the Department for publication via the Internet must satisfy the following criteria:- <ul style="list-style-type: none"> ▪ All files should be approximately 5 Mb. ▪ Large files of more than 5 Mb will need to be broken down and supplied as different files.

Attachment B3

State Government technical and policy guidelines

The following list provides relevant technical and Policy Guidelines which may assist in the preparation of the Environmental Assessment. It should be noted, however, that this list is not exhaustive as other documents and policies may need to be reviewed. It is also important to note that not of all of these guidelines may be relevant to your proposal.

The majority of these documents can be found on the relevant Departmental Websites, on the NSW Government's on-line bookshop at <http://www.bookshop.nsw.gov.au> or on the Commonwealth Government's publications website at <http://www.publications.gov.au>.

Aspect	Policy /Methodology
Biodiversity	
	Draft Guidelines for Threatened Species Assessment (DEC & DPI, 2005)
	Draft Threatened Biodiversity Survey and Assessment Guidelines (DEC, 2004)
	Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003)
	Policy and Guidelines: Aquatic Habitat Management and Fish Conservation (NSW Fisheries, 1999)
	Threatened Species Management Manual (NPWS, 1998)
Coastal Planning	
	NSW Coastal Policy 1997 - A sustainable Future for the New South Wales Coast, NSW Government, 1997
	Coastal Design Guidelines for NSW, PlanningNSW, February 2003
	NSW Wetlands Management Policy (DLWC, March 1996)
	Coastline Management Manual (NSW Government 1990)
Community Consultation	
	Guidelines For Major Project Community Consultation, (NSW Department of Planning, 2007) http://www.planning.nsw.gov.au/assessingdev/pdf/Dr3%20DOP%20GuideMajProjComConsult%20BRO.pdf
Bushfire	
	Planning for Bushfire Protection 2006 (NSW Rural Fire Service)
Contamination and Soils	
	Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land (DUAP & EPA, 1998)
	Best Practice in Contaminated Sites (Commonwealth DEH, 1999, ISBN 0 642 546460)

Aspect		Policy /Methodology
		Contaminated Sites: Sampling Design Guidelines (EPA, 1999)
		NSW Acid Sulfate Soil Management Advisory Committee - Acid Sulfate Soil Manual (ASSMAC,1998).
Environmental Management Systems		
		NSW Government Interim Water Quality and River Flow Environmental Objectives (DEC)
		Guidelines for the preparation of Environmental Management Plans (DIPNR, 2004)
Heritage		
Aboriginal	Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005)	
	Interim Community Consultation Requirements for Applicants (DEC, 2004)	
Non-Indigenous	Assessing Heritage Significance Update for Heritage Manual, NSW Heritage Office, 2000	
	Statements of Heritage Impact, NSW Heritage Office 2002	
	NSW Heritage Manual, NSW Heritage Office 1996	
Noise		
		Environmental Criteria for Road Traffic Noise (EPA, 1999)
		Acoustics - Road traffic noise intrusion - Building siting and construction (Standards Australia, 1989, AS 3671-1989)
Safety and Hazards		
		Electrical Safety Guidelines (Integral Energy)
Traffic & Transport		
		Guide to Traffic Engineering and Guide to Geometric Design of Rural Roads (Austroads, 2003, AP-G1/03)
		Guide to Traffic Generating Developments (RTA, 2002)
Urban Design: Cycleway/Pathway Design		
		Guidelines for the Design and Construction of Paths and Cycleways along Watercourses and Riparian Areas (Version 2) (DIPNR/DNR)
Water		
Water Quality	Water quality guidelines for the protection of aquatic ecosystems for upland rivers. (ANZECC, 2000)	
	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)	
Effluent Reuse	Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation (NSW DEC 2004)	
Floodplain	NSW Government Floodplain Development Manual - the Management of Flood Liable Land (DIPNR, 2005)	
	Practical Consideration of Climate Change – Floodplain Risk Management Guideline (DECC, October 2007)	
Groundwater	NSW State Groundwater Quality Protection Policy (DLWC, 1998, 0 7313 0379 2)	
	NSW State Groundwater Quality Protection Policy (DLWC 1998)	
	NSW Groundwater Dependent Ecosystem Policy (DLWC 2000)	
Stormwater	Managing Urban Stormwater: Soils & Construction (NSW Landcom, March 2004) - "The Blue Book"	
Waterways	Waterways Crossing Design & Construction (Version 4 – DIPNR/DNR)	

Aspect	Policy /Methodology
	Draft Guidelines)
Wetlands	NSW Wetlands Management Policy (DLWC 2000)

ATTACHMENT B4

RIVERSIDE AT TEA GARDENS GENERAL DGRS AND PART 3A ADVICE

The DGRs have been prepared based on the information provided to date. Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the proponent seeking approval for the project.

If the EA is not exhibited within 2 years of the date of issue of these requirements, you should consult further with the Director-General in relation to the preparation of the EA.

Please contact the Department at least two weeks before you propose to submit the Environmental Assessment (EA) for the project to determine:

- the fees applicable to the application. Note that you will need to provide a signed statement from a Quantity Surveyor to verify the capital investment value of the project;
- consultation and public exhibition arrangements that will apply; and
- number and format (hard-copy or CD-ROM) of the EA that will be required.

Prior to exhibiting the EA, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the EA does not adequately address the DGRs, the Director-General may require the proponent to revise the EA to address the matters notified to the proponent. Following this review period, the EA will be made publicly available for a minimum period of 30 days.

If your proposal includes any actions that could have a significant impact on matters of National Environmental Significance (NES), it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval is in addition to any approvals required under NSW legislation. It is your responsibility to contact the Commonwealth Department of the Environment, Water, Heritage and the Arts in Canberra (6274 1111 or <http://www.environment.gov.au>) to determine if the proposal is likely to have a significant impact on matters of NES and would require an approval under the EPBC Act. The Commonwealth Government has accredited the NSW environmental assessment process for assessing any impacts on matters of NES. As a result, if it is determined that an approval is required under the EPBC Act, please contact the Department immediately as supplementary DGRs will need to be issued.

Please note that under section 75U of the Act, Part 3A applications do not require certain permits/approvals required under other legislation. These matters are considered as part of the Part 3A assessment process. For example, Section 87 permits and Section 90 consents under the *National Parks and Wildlife Act 1974* are not required for Part 3A applications. Section 75U applies from the date of issue of the DGRs.

Notwithstanding, the Department still requires an equivalent level of information within the EA as would ordinarily be required for the issue of any such permit/approval to enable an assessment of the relevant works. Please notify the Department should any sub-surface testing be required during the preparation of your EA.