

RESPONSE TO AGENCY SUBMISSIONS

CONCEPT PLAN APPLICATION SANDON POINT



Prepared by

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On behalf of

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(Project Ref: 5565F)

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On behalf of

Anglican Retirement Villages

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- A Residential Design Guidelines – The Point
- B Response from Brown Consulting dated 26 September 2006 including Development plan showing extents of 100 year ARI (1% AEP) flood levels and PMF levels, post development
- C Response from Cardno Forbes Rigby dated 25 September 2006
- D Response from Cumberland Ecology dated 26 September 2006
- E Response from AVK Bushfire Consultants dated 13 September, 2006
- F Dr Mark Taylor's Geomorphic Assessment (extract from Stormwater Masterplan, February 2003) and letter dated 22 September 2006
- G Overlay mapping of Ecological APZs Charles Hill plans and development proposal at 1:2000
- H Response from Susan McIntyre-Tamwoy dated 20 September 2006
- I Response from Cardno Forbes Rigby dated 22 September 2006 regarding services and construction matters
- J Tabulated cross reference of Agency submissions by issue numbers in this submission

BUILDING FORM AND SCALE

Issue 1 Building envelope controls

ISSUE 1 *Building envelope controls alone are insufficient and additional controls are required to control bulk and scale and produce an appropriate built form. Consider further controls.*

Agency DoP Memo of 1.9.06, page 2

This issue is raised specifically in regard to the Stockland component of the development. Accordingly, the following response relates specifically to the proposed planning controls in the SSS study that this relates to the Stockland development.

We note that a significant proportion of the site is to be conserved as public green space (to be zoned) and that the FSR potential referred to in the DoP submission is not achievable and various mechanisms are proposed to control the bulk and scale of development to acceptable limits. These matters are commented on as follows.

The total area to which the Concept Plan relates is approximately 30.8ha. The Residential 2(b) zone is approximately 21.4ha (69%) and the Environmental Protection 7(a) zone is approximately 94600m² or 31% of the site.

The NSW Coastal Design Guidelines provides that along the coastal edge or foreshore reserve in a new settlement, 30% of a site should be maintained as a deep soil zone, for open space and landscaping purposes. The overall outcome for the site achieves the 30% built upon area owing to the amount of environmental protection land that is provided as part of the proposal. That is, more than 30% of the site is excluded from development before any further restrictions are considered on a lot by lot basis.

A building envelope is determined by compliance with controls such as setback, landscaped area and height. Its purpose is to provide an envelope within which development may occur but not one which the development should necessarily fill. The maximum FSR effectively achievable should always result in a building which is smaller than the building envelope. The purpose and distinction between FSR and building envelope has been encapsulated within a planning principle published by the NSW Land and Environment Court in the matter of *PDE Investments No. 8 Pty Ltd v Manly Council [2004] NSWLEC 335*.

The DOP submission estimates that the proposed building envelope controls could result in single dwellings with an FSR of 2.1:1. It is not understood how this floor space ratio could be achieved. Using the proposed development controls outlined in the SSS Study, the theoretical FSR for a single dwelling lot can be calculated as follows:

- Typical lot dimensions – 11.7m x 30m (350m²)
- Average front setback – 5 m (deduct 58.5m²)
- Minimum rear setback – 5 m (deduct 58.5m²)
- Minimum one side setback – 0.9 m (deduct 18m²)

- Typical double garage excluded from FSR as per WLEP 1990 (deduct 36m²)
- Total of maximum floor space – 179m² or FSR of 0.51:1
- If two storey dwelling, maximum floor space on same footprint = 394m² – FSR 1.1:1.

This is a purely hypothetical outcome. A FSR would also need to take into account reduced floor area due to architectural modulation, landscaped area, private open space controls, overshadowing and privacy criteria. These additional controls and considerations would not enable the maximum floor area to be achieved. The maximum FSR of dwellings in stages 1 to 6 in The Point Estate is 0.5:1.

We note that Charles Hill in his recommendations and conclusions in relation to built form stated that:

“That the appropriate development for the Col can be determined by way of a development concept plan for the site which defines envelope controls for the site having regard to these matters generally outlined in the Schedule to SEPP 71 (although the site is not subject to the provisions of SEPP 71).

Any changes to the floor space ratio provisions by Council should be subject to more detailed assessment as part of the formulation of the Concept Plan and subject to negotiation with Stockland having regard to an agreement with the relevant parties as to the extent of private lands which are to be brought into public ownership.”

Clause 20(j) of SEPP 71 requires a master plan (concept plan) to demonstrate building envelopes and built form controls. The State Significant Site (SSS) study and Concept Plan incorporates built form controls of site cover, setbacks and heights. A FSR is not specified as Stockland will prepare detailed design guidelines for the residential subdivision and super lots with the subsequent project plan applications (as indicated in Stockland's Statement of Commitments). These controls will contain more detailed urban design matters such as architectural details and building materials to supplement the built form controls contained in the EAR, which will operate in conjunction with the built form controls nominated in the SSS study to ensure that the future scale and bulk of development is appropriate for the site and consistent with the adjoining housing being developed south of the site (The Point).

A copy of the Residential Design Guidelines for The Point is provided for information as **Appendix A**. These guidelines have proven to provide an effective mechanism to achieve an appropriate and integrated urban design outcome for a residential estate.

Consistent with the recommendations of the Hill Report, the proposal seeks only concept plan approval and having regard to the above considerations, it was not considered necessary to establish a maximum FSR. More detail design investigations and assessment at the project plan stage may allow for more definitive FSR limits to be set if required.

While not raised as specific issue in regard to the ARV site it is noted that building bulk and form is also assessed in the concept plan application and EA report for this component of the proposal.

RIPARIAN CORRIDOR WIDTHS/ BIODIVERSITY & APZs

Issue 2 Zone boundaries

ISSUE 2 *Justification for altered zone boundary / compliance with zone boundaries recommended by Charles Hill*

Agency	DoP	Memo of 1.9.06, page 3
	DEC	Letter dated 16.8.06, page 3
	WCC	Letter of 1.9.06, page 2

This comment relates to the SSS Study in regard to both the Stockland and ARV components. A response in regard to each component of the proposal is provided as follows.

Stockland Component

The WCC submission states that further details are required regarding the size and management of the riparian zones having regard to the Charles Hill report.

The proposal does not reduce the zoned riparian corridor as reflected in Wollongong LEP prepared by Council but overall substantially increases the area conserved for rehabilitated riparian corridors. The SSS study does not assert that Charles Hill's recommendations are incorrect, but as noted in WCC's submission, the SSS study recognises that Charles Hill required more detail to be definitive.

The SSS study concludes that the question of the riparian corridor width and therefore zone boundary location is not a question of impact on the existing environment arising from the development but rather is a question of what would be ideal in regard to a reconstructed environment. The proposed residential development provides a mechanism to rehabilitate an abandoned industrial and mining site (refer to **Illustration 1** – Aerial Photograph of Site in 1986). This must be balanced with what is economically viable and achievable from a practical point of view.

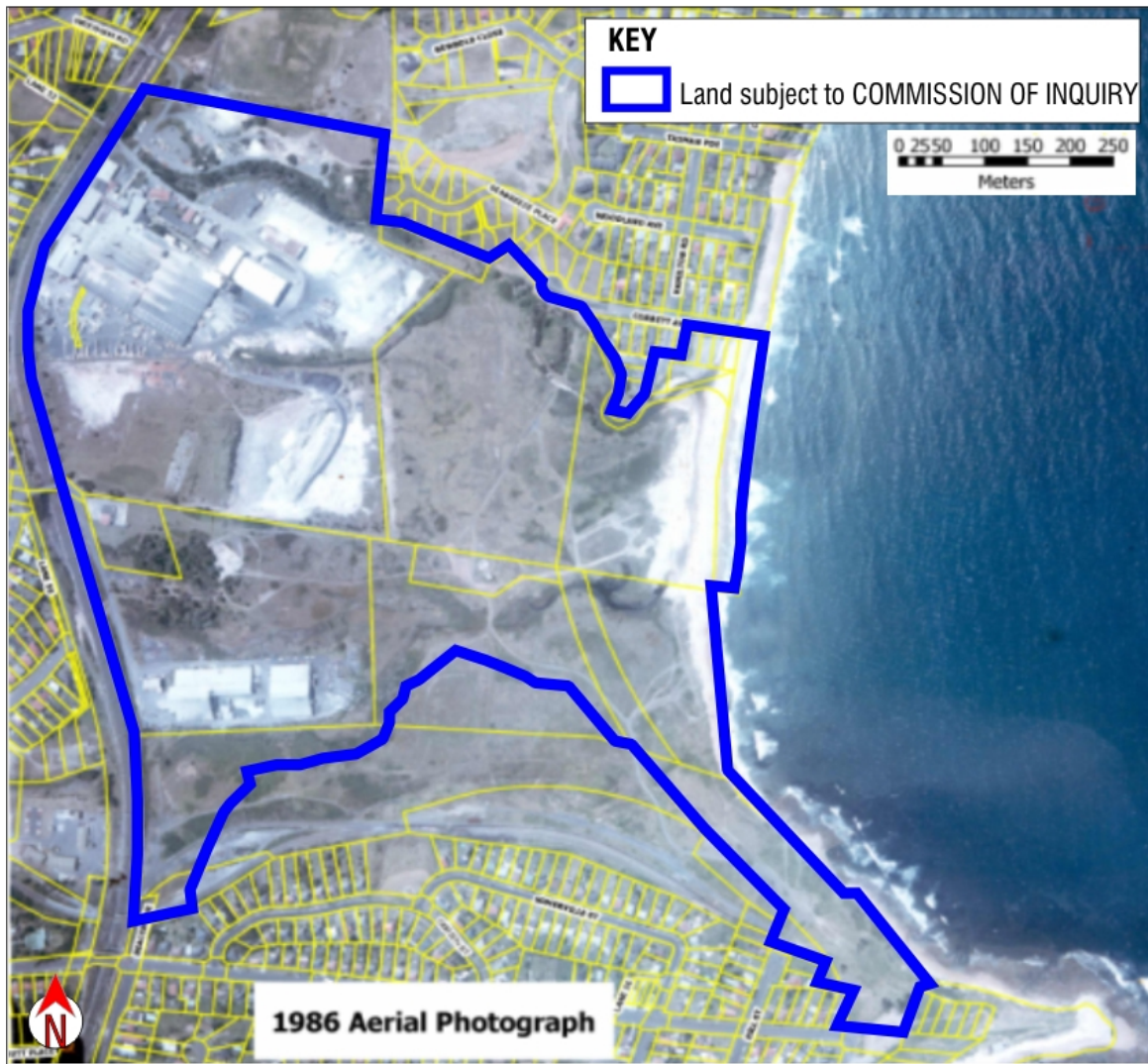


Illustration 1 – Aerial Photograph of Subject Lands in 1986

Stockland estimate that the cost of reconstruction the creek corridors would be in the vicinity of \$4.1million (excluding water sensitive urban design works and establishment costs and the value of land to be incorporated into the corridors currently zoned for urban residential purposes). The infrastructure required to reconstruct the creek corridors will be significant, and the works are to be carried out in a corridor wider than the current zoning.

The Hewitts Creek riparian corridor is to be a minimum 50m wide, which is in accordance with the Charles Hill report. Its location has been adjusted to reflect flooding, ecological and practical constraints.

The issue of the appropriate width of the riparian corridors has been the subject of extensive assessments over a considerable period of time. As part of due diligence investigations prior to the purchase of the land, the (then) DLWC advised that riparian corridors which conformed to the area zoned 6(a) would be acceptable. During court proceedings for Stages 2 to 6, the DLWC affirmed alternative wider corridor widths for

Woodlands and Tramway Creeks in a Deed of Agreement. More recently the Minister has decided to adopt the recommendations of the Charles Hill report, which consequently establishes principles to determining the corridor widths. The concept plan application accepts the principles within the Charles Hill report notwithstanding that they reflect corridor widths greater than Stockland have previously understood would be required. It is recognised that there are discrepancies between the written recommendations and some drawn figures in the Charles Hill report, and the SSS Study explains these differences and demonstrates how the logical and appropriate principles of the Hill report are satisfied.

From a practical point of view, any further widening of the riparian corridors will result in a corresponding narrowing of developable area and would compromise the feasibility of the development, with no environmental impact mitigation basis. The northern part of the subdivision containing the 2 super lots and 5 residential lots would be narrowed to an impractical width for subdivision with a resultant trade off in built form. A similar outcome would occur elsewhere with developable areas reduced to narrow peninsulas reducing the lot layout efficiency. The current lot layout achieves roads adjoining the riparian corridors preventing proposed allotments backing onto the riparian corridors. This approach reduces efficiency of the subdivision layout, but provides maximum visibility, access and delineation to avoid interface impacts while allowing corridors to be fully appreciated and more readily maintained. This would not be achievable if the developable areas were narrowed to reflect wider riparian corridors, and result in a poor outcome for the community.

Five areas of considerations were taken into account when establishing the riparian zone width and location and therefore the zone boundaries, including flooding, ecological, geomorphologic, visual and bushfire. All these elements are addressed below.

ARV Component

Land use boundaries have been changed slightly from the Hill Report, but they remain similar to those of the Hill Report. Page 30 of the Hill Report stated that the mapped boundaries of the conservation zones and riparian zones should be regarded as indicative and flexible. The boundaries that are proposed in the Concept Plan have been put forward after due consideration of the type and condition of the creek, the actual mapped extent of the Turpentine Forest and the need to balance environmental outcomes with planning and design outcomes.

Land use boundaries are justified in the State significant study which refers to technical documents in the EA Report. These all highlight that the riparian corridor through ARV site is of sufficient width to maintain its ecological and hydrological values. Further, the concept plan provides for the improvement of the riparian corridor in terms of its habitat value and the quality and quantity of water flows.

Issue 3 Corridor widths

ISSUE 3 *Corridor widths insufficient. Proposed widths might compromise ecological function and effect potential rehabilitation options upstream. DEC submits zone boundaries should not be finalised until riparian corridor widths resolved. DEC does not agree with Charles Hill Report and considers Col should be adopted*

Agency **DNR** **Letter dated 3.8.06, page 3**
 DEC **Letter dated 16.8.06, page 3**

These comments effectively relate to the SSS Study in regard to both the Stockland and ARV components. A response in regard to each component of the proposal is provided as follows.

Stockland Component

As discussed above, having regard to the Minister's determination that the future planning and development of the Sandon Point site should be in accordance with the Charles Hill recommendations (and not the COI). It is considered appropriate that the Hill report forms the basis for the determination of riparian corridor widths. The SSS Study adopts the recommendations of the Hill report for the purposes of delineating proposed zone boundaries and consequently riparian corridor widths. The Hill report is not definitive in all respects, but establishes clear principles for the determination of the riparian corridor widths, subject to further detailed assessments of specific matters, such as flooding. Accordingly, the SSS Study includes additional specialist advice from Brown Consulting dealing with flooding and related issues (refer to Appendix B of SSS Study) and draws upon other existing specialist information in accordance with the advice of the DoP.

Notwithstanding the extensive history to the assessment of this issue, various government agencies continue to question the appropriate width of the riparian corridors. While it is contended that the SSS Study and EAR provide riparian corridors which are consistent with the recommendations of the Charles Hill report, we have obtained further specialist advice to comment on this issue arising from agency submissions. We outline the additional specialist advice obtained, with regard to the various criteria relevant to the design of the riparian corridors, as follows.

Flooding

Additional specialist advice and is attached as follows:

- Correspondence from Brown Consulting dated 26 September 2006 included as **Appendix B**. Brown Consulting have provided significant input in regard to this issue of flooding, incorporating detailed flood modelling which was previously submitted to the COI.
- Correspondence providing a peer review from Cardno Forbes Rigby Pty Ltd dated 25 September 2006, included as **Appendix C**. Cardno Forbes Rigby were the authors of the Hewitts Creek Floodplain Management Study and Plan, commissioned by Wollongong City Council and overseen by a committee

represented by various agencies inclusive of the (now) Department of Natural Resources.

In summary, the conclusions that can be drawn from the application itself and the additional attached specialist advice is as follows:

- The flooding assessment undertaken by Brown Consulting is robust and correct.
- Flood extents up to the PMF within the subject site will be contained within the area of the riparian corridors and abutting roads for the Hewitts and Woodlands Creeks and no adjacent proposed residential allotment will be affected.
- The 100 year ARI flood extent will be contained within the riparian corridor for Tramway Creek and at a minimum the adjacent residential lots are proposed to have building pads located at the PMF level.
- The proposed development is consistent with the Hewitts Creek Floodplain Risk Management Plan.
- The site works associated with the proposed development, inclusive of the reconstruction and rehabilitation of the creek corridors will have no unacceptable impacts upon adjoining urban land.
- The final detailed designs for the riparian corridors will ensure their long term stability and reflect an appropriate degree of sinusoidal treatment and adherence to threshold shear stress and stream power.

Ecological

The existing site has been substantially degraded due to past industrial activities and will require substantial site modification works to enable urban development in accordance with its planned and zoned intent. The implications are that there is minimal natural vegetation remaining on the site, and where existing, it is in a substantially degraded state. Secondly, some site works are required to facilitate any urban development across the land, such as the reconstruction of the riparian corridors to specifically address the issue of flooding.

The SSS Study and EAR relating to the Stockland site, draws substantially from previous investigations undertaken by Connell Wagner and Sainty & Associates, with some additional investigations undertaken by Cumberland Ecology to validate these earlier assessments and undertake targeted field surveys for the Green and Golden Bell Frog, which was an information gap associated with previous assessments. Cumberland Ecology have subsequently been requested to provide a further review of the proposal, having regard to the Agency comments, and their response is provided as **Appendix D**. The conclusions of this review do not alter the position of the EAR and development proposal, or the appropriateness of the corridor. Further comment in regard to ecological issues is provided later.

Visual

The proposed riparian corridors represent 30% of the site and as outlined within the EAR will provide a substantial positive visual element in the future landscape. There are no agency comments arising that dispute the appropriateness of the width of the corridor having regard to visual considerations.

Bushfire

The EAR includes a detailed bushfire assessment prepared by AVK Environmental (refer to Appendix F of the EAR). A review of the comments provided by the Rural Fire Service in regard to the bushfire has been undertaken by AVK, and their response is contained at **Appendix E**, and is discussed in greater detail later in this submission.

In regard to riparian corridors, the APZ required for the development are all contained outside of the proposed riparian corridors with regard to the Stockland site, with the exception of a section to the south of Tramway Creek, which is subject to an existing VMP. As will be discussed later, the incursion of the APZ into this section of corridor is to be offset by the inclusion of additional land within the VMP.

ARV Component

In regard to the ARV component, the riparian corridor issue is limited to Cooksons Creek, which is a minor watercourse relative to those discussed above. Justification is provided in HLA Overview, State significant study and EA Report which highlight that the riparian corridor through ARV site is of sufficient width to maintain its ecological and hydrological and essential visual values. Further, the concept plan provides for the improvement of the riparian corridor in terms of its habitat value and the quality and quantity of water flows. The Concept Plan justifies the reduction in riparian zones as site specific ecological, bushfire and hydrological studies have maintained adequate corridors for ecological functions and protection of the ecological communities.

The riparian corridors proposed adequately provide for the maintenance of ecological functions and will therefore protect and allow for the enhancement of the EEC's. The riparian buffers recommended in the COI report were recognised as guidelines and note that they need to be specific to ecosystems being managed. This requirement has been observed in principle and balanced with the area of developable land which is required to fund the regeneration and management of the corridors in the long term. This is explained in Section A.3 of the Flora and Fauna Assessment reports.

Although the areas of newly listed EECs have not been specifically mapped for the ARV site, they conform to the previous listing, as explained in Section A.3 of the Updated Flora and Fauna Assessment for the Stocklands site (Cumberland Ecology 2006). The proposed active management of the riparian vegetation is considered to greatly benefit the communities and offset and potential impacts from the developments, as explained in Section 4 of the flora and fauna assessment for a residential aged care facility (Cumberland Ecology 2006). As explained above, the ecological functions of the creeks will be retained and restored through proposed management.

Issue 4 Inconsistency with various stage agency policies

ISSUE 4 *Inconsistent with various state agency policies including Riparian Corridor Management Study or draft Illawarra Regional Strategy*

Agency DNR Letter dated 3.8.06, page 4

The draft Illawarra Regional Strategy was not available in any form at the time of lodgement of the application. Notwithstanding, the Regional Manager of the South Coast branch of the DoP was consulted and the advice obtained is recorded within the SSS Study (refer to Section 3.2.8 and 4.2.4 of the SSS Study). The draft Illawarra Regional Strategy provides no specific comment in regard to Sandon Point, only general principles. These principles relate to both environmental considerations that have been addressed, and other objectives such as the need to ensure an adequate supply of land is created to support economic growth and provide housing choice (refer to page 9 of the Draft Strategy). Map 2 of the draft Illawarra Strategy does not identify the subject site as being affected by any endangered ecological community, indicative DEC original habitat corridor, other indicative habitat corridors or wetland.

The draft Illawarra Strategy (page 34) does note that parts of Sandon Point will provide for the conservation of Aboriginal cultural values, and this is a process that has commenced with the development of stages 1 to 6. The recommendations are identified within the report of Stuart Huys, as discussed below.

Consistency with the riparian corridor management strategy is addressed within the response from Brown Consulting contained at **Appendix B** in regard to the Stockland component of the development. The above comments regarding Cookson Creek Address riparian corridor issues associated with the ARV component.

Issue 5 Long term stability and “natural design” approach for creeks

ISSUE 5 *Long term stability and consistency with "natural design" approach for creeks*

Agency DoP Memo of 1.9.06, page 2 and 3

This issue relates specifically only to the Stockland component of the development which necessarily involves the reconstruction of degrading creek corridors.

A Geomorphic Assessment of the riparian corridors was carried out by Dr Mark Taylor, Senior Lecturer in Environmental Science, Department of Physical Geography, Macquarie University, as part of Stockland's Col submission. Mark Taylor's assessment is included in the Stormwater Masterplan prepared by Robinson GRC Consulting (now Brown Consulting). An extract of the Stormwater Masterplan containing the Geomorphic Assessment is attached at **Appendix F**.

Dr Taylor was requested to review his previous findings in the context of the concept plan. His review is also included in **Appendix F**.

Dr Taylor's original assessment clarified Hewitts & Woodlands Creeks as "highly degraded" in that they have limited natural recovery potential. Although, Dr Taylor noted that because Woodlands Creek "is well connected to stable, self maintaining systems up and downstream, it should also be viewed as a "Strategic Reach"". Strategic Reaches are described as being *"reaches of river that may be sensitive to disturbance, triggering impacts that may have off-site secondary responses. Proactive (or pre-emptive) management strategies are the most effective means of river conservation, particularly where disturbances may threaten the integrity of remnant or Conservation Reaches"*.

Dr Taylor found that the *"management strategies proposed by Stockland are an effective and pragmatic means of achieving river conservation. Without intervention, the reach will never recover because disturbance has diminished and removed any semblance of suitable biophysical structure. The reach will be almost entirely created from scratch, one that incorporates the maximum possible biophysical diversity as well as integrating the requirements for flood mitigation, within the agreed confines of the riparian corridor"*.

Dr Taylor also assessed the geomorphic recovery potential of both creeks and found that for Hewitts and Woodlands Creeks, their potential relies upon human intervention and can *"be created reaches, developed using a combination of pragmatic (hydraulic and flood mitigation) and biophysical (appropriate vegetation and self-sustaining width: depth ratios) guidelines. However, it is relevant to note that it is very unlikely that either of the creeks will reach this stage without human intervention"*.

Having established their potential, Dr Taylor has also assessed whether their created condition is self sustaining and in this regard, finds as follows:

"A reasonable target for the end point of channel recovery of these two creeks is to consider whether the end point, the "created condition", is self sustaining within the modeled physical processes that characterise the catchment. It [sic] accepted (by DLWC and ourselves) that there would be damage to riparian vegetation, some soil loss and associated changes in channel geomorphology as flow increases above the 1:5 year ARI storm event. Within the riparian zone, agreed to between Stockland and DLWC in the Deed of Agreement, this is achievable – flood mitigation concerns can be met and a suitably created geomorphic structure can be developed that offers acceptable form and function such that the upstream and downstream reaches will not be negatively effected.

Overall, it would appear that the long-term prognosis (riparian vegetation, geomorphic function and habitat) is far better for Woodland's rather than Hewitt's Creek. It is worth noting that while one may devise a suitable biophysical structure for Hewitt's Creek, similar to Woodland's Creek, the caveat is that in the long term one can expect Woodland's to retain more of the naturalized and created condition than Hewitt's because of inherent catchment factors, which lie beyond Stockland's control."

Dr Taylor has reviewed these findings and in the context of the concept plan does "not see the need to deviate" from his findings (refer **Appendix F**, letter dated 22 September 2006).

The issue of creek stability is also discussed in the response by Brown Consulting and the peer review of Brown Consulting's response by Cardno Forbes Rigby which is contained at **Appendix B** and **Appendix C**, respectively.

Refer to Issue 3 and below.

Issue 6 Impact of extreme flows on creek stability

ISSUE 6 Extreme flows confined to narrow corridors will impact creek stability

Agency DNR Letter dated 3.8.06, page 3

Refer to Issue 3 and below.

Issue 7 Reduced riparian buffer widths to Hewitts Creek

ISSUE 7 Reduced Riparian buffer width for Hewitt's Creek (refer to Hill recommendation). Clarify with map showing extent of EECs as mapped by Cumberland Ecology

Agency DoP Memo of 1.9.06, page 3

This issue relates specifically to the Stockland component of the development, with respect to Hewitts Creek. Similar issues in regard to other creeks are discussed below.

Appendix G illustrates the concept plan in relation to the EEC and buffer zones mapped by Connell Wagner and Sainty & Associates in their Flora and Fauna Assessment dated 12 June 2001 (mapped at a scale of 1:2000). We note that the DoP requested the plan at a scale of 1:200, however this is an unnecessarily large print size for a concept plan. We have provided an electronic copy that can be enlarged to focus on those areas of particular interest to the DoP. No additional mapping of EECs has been undertaken by Cumberland Ecology within the Stockland lands but available mapping was reviewed by Cumberland Ecology and determined acceptable. No EECs have been mapped or identified within the Hewitts Creek Corridor. This plan also overlays the Charles Hill recommended buffer, as indicated by Figure 14 and 15 only and not the recommendations in the text of the report.

A 50m wide riparian corridor is proposed for Hewitts Creek consistent with the Charles Hill report (p.40) which recommends that the riparian zone for Hewitts Creek should be 50m (comprising a 30m core area and a 10m wide buffer either side). However, the Charles Hill text is not reflective of the mapping. In particular Figure 14 indicates a riparian corridor that varies in width between approximately 75 to 90 metres, which appears to have been derived from the constraints mapping. As detailed in the SSS study (p.18) that whilst Charles Hill recommends a 50m wide riparian corridor its exact location should be determined through the detailed riparian design as part of the concept plan and the Council's adopted Floodplain Risk Management Plan. Unless this process confirmed otherwise, the riparian corridor was required by Charles Hill to align with the current Residential 2(b) zone boundary (p.42). North of Hewitts Creek, Charles Hill concludes (p.36) that due to the proximity of Thirroul Railway Station and the potential to

increase housing opportunities, and an apparent lack of conservation value in that areas, that determining weight should be given to retaining existing zone boundaries.

As stated above, the proposal includes a 50m wide riparian corridor consistent with Charles Hill's written recommendation. The northern edge of the corridor aligns with the current Residential 2(b) zone boundary. The riparian corridor therefore has a logical connection with the existing 6(a) zone Public Recreation zone downstream. This ensures that the developable land zoned Residential 2(b) has sufficient depth to be capable of development to realise the increased housing opportunities identified for this part of the site by both the COI and Charles Hill.

Appendix G also demonstrates that the northern extent of the corridor corresponds with the northern vegetation buffer zone recommended by Connell Wagner and Sainty & Associates. Likewise the southern edge of the Hewitts Creek riparian corridor matches the Residential 2(b) zone boundary at its western end.

Issue 8 Variations to riparian buffer widths recommended by Charles Hill

ISSUE 8 *Justify variations to riparian buffer widths recommended by Charles Hill, demonstrate that all EECs are protected. Show all EECs overlain on Concept Plan*

Agency **DoP** **Memo of 1.9.06, page 3**
DEC **Letter dated 16.8.06, pages 3 8 & 9**

Appendix G indicates the EECs as mapped by Connell Wagner and Sainty & Associates compared with the Charles Hill recommended riparian corridors. The variation between the Charles Hill riparian corridors and proposed zone boundaries/corridors for Hewitts Creek is discussed above. Further discussion regarding Woodlands Tramway and Cooksons Creeks and impact on EECs is provided below.

Woodlands Creek

In relation to Woodlands Creek, the EEC is wholly within the riparian corridor proposed for Woodlands Creek, although part of the EEC is affected by proposed works associated with the rehabilitation of the creek. Whilst this area is mapped as SCESF community Connell Wagner and Sainty & Associates (June 2001) note at page 10 that:

"Only the vegetation downstream of the junction of Hewitts Creek with the Woodlands Creek diversion channel is considered to be representative of the SCESFC community (note: this area is outside of the area owned by Stockland Pty Ltd and as such has not been shown on Figure 3.2). The vegetation upstream of this junction with the diversion channel is considered to be representative of a moist sclerophyll forest association, with substantial modification and regeneration occurring within the creek bed and bank."

Their report also notes (p. 14) that:

“Along Woodlands Creek, a buffer zone (or green link) of varying width between 30m and 60m is proposed to be established which would provide for the (re)establishment of the SCESFC community and serve to protect and enhance the currently degraded components of this community.”

The above findings of the Flora and Fauna Assessment (June 2001) would account for the proposed vegetation buffer skirting the northern edge of the mapped EEC, and at one point extending into the EEC. The conclusions of the Assessment were that this section of Woodlands Creek is degraded and should be rehabilitated to provide the necessary mechanism for the enhancement and future protection of the EEC. Dr Mark Taylor's findings also concluded that Woodlands Creek is degraded, although has potential for conservation with human intervention. The Col and Charles Hill reports also recognised the degraded state of Woodlands Creek and the need for its rehabilitation.

The reconstruction of Woodlands Creek and rehabilitation works will have an inevitable and unavoidable impact on the EEC as mapped on **Appendix G**.

The urban development of the subject site will enable the reconstruction of the creek corridors and will contain the extent of flooding within the riparian corridor. This is the consequence of undertaking a comprehensive rehabilitation of a degraded industrial site that will reinstate the creek that is currently piped and filled as a consequence of previous industrial development. Major earthworks and riparian restoration that will establish a permanent creek corridor is a consequence of this proposal. However, these impacts need to be balanced with the objectives of rehabilitating the creek (both in its design and revegetation) which is essential to maintaining the presence of the EEC. The integrated water sensitive urban design and proposed VMP will significantly reduce the sedimentation and weed invasion presently threatening the ECC. Without these works (which are only ever likely to occur with redevelopment) the EEC will continue to suffer from the current impacts and its degraded state is unlikely to improve.

Measures to minimise impacts on the small area of poor quality EECs within the creek corridors associated with such works will be identified at the more detail Project Plan stage. This will not impact on the width of riparian corridors which is sought to be established at the Concept Plan stage.

Tramway Creek

As noted on the plan at **Appendix G** the location of the Charles Hill riparian corridor buffer does not accord with the alignment of Sandon Drive or the edge of the rehabilitation works to Tramway Creek as approved as part of Stages 2 to 6. Sandon Drive is approved and constructed. The Charles Hill recommended buffer line to a large extent matches the alignment of the mapped EEC and in some locations intrudes into the mapped EEC. **Appendix G** also indicates that part of the original EEC lies within Sandon Drive the location of which was approved as part of Stages 2 to 6.

In their conclusion of the then eight-part test for *Maundia triglochinos* and the SCESFC EEC under the Threatened Species and Conservation Act (Connell Wagner/Sainty & Associates 2001, pg 19) make the following statements in relation to the EECs along all creeks:

- *"No listed threatened flora species (under the Schedules of the TSC Act) were sighted during the detailed inspections for this report in April / May 2001.*
- *The previous record of Maundia triglochinos at the site is unconfirmed, however notwithstanding this the proposal would not result in the loss of any habitat for this species throughout the site should it be present.*
- *Vegetation along and within Tramway, Woodlands and Hewitts Creeks and their catchments has been largely removed and / or modified following European occupation.*
- *The wetlands and riparian areas within components of all three creeks have been designated as an Endangered Ecological Community - Sydney Coastal Estuary Swamp Forest Complex (SCESFC).*
- *The SCESFC community within the site requires rehabilitation. Proposed planting of a minimum 13m wide buffer zone connecting remnant vegetation along the southern side of Tramway Creek would improve the community over what is currently found within the site.*
- *The zone at the confluence of Tramway Creek and the unnamed tributary flowing from the Cookson property is sufficiently wide to constitute a robust ecological unit.*
- *The rehabilitation of Woodlands Creek to 30-60m in width would result in a major improvement to the SCESFC community along this watercourse.*
- *The wetland vegetation units may become contaminated with sediment during construction, due to the slope of the site and the inability of most soil and erosion plans to manage moderate to major rainfall events. Once the construction phase concludes and nutrient run-off from gardens and contaminants released from new bitumen is over, the planned stormwater control method (sand filter and diversion of flow to the lower end of Tramway Creek) would result in greatly reduced contamination of the system.*
- *Equally important to the rehabilitation plan would be the maintenance of the vegetated areas by limiting sedimentation of the reedland and controlling weeds. A maintenance plan is required to so that action can be taken to arrest current weed and sedimentation problems.*
- *The development as proposed and assessed above does not include provision for increasing the capacity of the culvert under the railway at Tramway Creek. This would be required to be assessed separately if it was determined that this would occur either as part of the development or at a later stage.*
- *The development as proposed and assessed above does not include provision for a bridge crossing of Tramway Creek or the tributary flowing from the Cookson property. This would be required to be assessed separately if it was determined that this crossing would occur either as part of the development or at a later stage.*

Based on the above points of consideration, it is concluded that the proposed development within the site is unlikely to have a significant effect on either Maundia triglochinos or the SCESFC community, and as such a Species Impact Statement is not required."

The development footprint of the proposal has not increased or extended further into the EEC since the preparation of the Flora and Fauna Assessment and the proposed zone

boundaries and concept plan application reflect the findings of the Flora and Fauna Assessments.

It should also be noted that Stockland has commenced a comprehensive regeneration of the degraded areas of Tramway Creek and this regeneration will continue and be maintained.

Notwithstanding the above, Cumberland Ecology were requested to review and comment on the issue. Their response in relation the issue is provided as **Appendix D**. In summary, Cumberland Ecology advises:

- That weed invasion appears to be the major threat to the integrity of the EECs based on existing conditions. The proposed vegetation management plans will address this threat and compensate for some minor impacts.
- The ecological function of the corridors will not be compromised by the setback of the development from the creeks, nor compromise the revegetation opportunities.
- The proposed requirement of 40m buffers will result in a creek corridor of over 100 metres wide. In the context of degraded creek corridors being reinstated and repaired, this is extravagant and would unnecessarily sterilise developable land, as we have discussed above.
- The creeks should not be classed as Category 1 streams, taking into account the existing site conditions and their small unnatural and semi-natural state. The proposal essentially conforms to Category 2 streams and the proposed widths are adequate to maintain the ecological values of the small streams on site.

Cooksons Creeks and ARV Site Generally

Size of riparian corridor is justified in HLA Overview, State significant study and EA Report which highlight that the riparian corridor through ARV site is of sufficient width to maintain its ecological and hydrological values. Further, the concept plan provides for the improvement of the riparian corridor in terms of its habitat value and the quality and quantity of water flows. The size of the riparian buffers is considered adequate as explained in the flora and fauna assessment reports for ARV and Stocklands land, the riparian corridors proposed adequately provide for the maintenance of ecological functions and will therefore protect and allow for the enhancement of the EEC's.

The riparian buffers recommended in the COI report were recognised as guidelines and note that they need to be specific to ecosystems being managed. This requirement has been observed in principle and balanced with the area of developable land which is required to fund the regeneration and management of the corridors in the long term. This is explained in Section A.3 of the Flora and Fauna Assessment reports for the Stocklands and ARV sites. Further justification regarding the size of the riparian zones is also provided elsewhere in this submission.

Issue 9 Incursion of APZ into Turpentine Forest

ISSUE 9 Justify incursion of APZ into Turpentine Forest

Agency DoP Memo of 1.9.06, page 1

The BES report appended to the ARV component of the EAR has proposed a 20 m APZ between the bushland associated with the Turpentine Forest and adjacent development. Cumberland Ecology discusses and justifies the inclusion of a portion of the APZ within the disturbed margins of the Forest. The incursion referred to by the DoP has been determined by the original mapping of the extent of Turpentine Forest in 2002, which included all vegetation surrounding the forest. Cumberland Ecology ground-truthed the extent of turpentine forest as at 2006, and determined that the highly disturbed margins were not representative of the whole community.

The APZ will not be located within the representative Turpentine Forest. APZs will be fuel managed and include weed removal, particularly Lantana which has invaded the forest. The APZ will in this regard act as a rigorous buffer to edge-effects from development. The removal of trees to separate the canopy within the managed zone will be of little impact to the community as a whole, as clearing will be selective, allowing for the retention of key trees, and will involve only a small number at the margins of the forest. This clearance will be adequately off-set by the proposed active management of the protected Turpentine Forest, which will enhance the condition of the forest, and maintain the integrity of the community in the long-term.

Issue 10 Encroachment of APZs into Turpentine Forest (Hill recommendation for 20m setback)

ISSUE 10 Justification for encroachment of APZs into Turpentine Forest (refer to Hill Recommendation for 20m setback)

Agency DoP Memo of 1.9.06, page 1

Refer to response provided in regard to Issue 9.

Issue 11 1:2000 map overlay of EEC, APZs and Hill recommendations

ISSUE 11 Provide a 1:2000 map which overlays Charles Hill recommendations, APZs and EECs with the Concept Plan

Agency DoP Memo of 1.9.06, page 3

This comment relates to the EAR and the SSS Study in regard to both the Stockland and ARV components. A response in regard to each component of the proposal is provided as follows.

Stockland Component

Appendix G illustrates the Concept Plan and APZs overlain with the mapped extent of the SCESFC and the Vegetated Buffer Zone established by Connell Wagner and Sainty & Associates (June 2001). This map has been electronically prepared and printed at a scale of 1:2000. The Vegetated Buffer Zone also sets the line of the Deed of Agreement between Stockland and DLWC for the buffers zones relating to Woodlands Creek and Tramway Creek, and ultimately the southern extent of the area to which the Vegetation Management Plan (VMP) for Tramway Creek relates.

Appendix G also provides an additional layer, being the Charles Hill recommended zone buffer width and flexible zone boundary for Woodlands Creek and illustrates in respect of each creek the following:

- Hewitts Creek The APZ is located predominantly outside of the buffer areas.
- Woodlands Creek North of the creek, the APZ is within the buffer, however Charles Hill notes at pages 40 and 42 that the final design should take into consideration the Hewitts Creek Floodplain Risk Management Study. This study which has been completed recommends the removal of the drainage connection between Woodlands and Hewitts Creeks reducing the depth of the buffer required. The APZ in part coincides in part with the flexible zone boundary along the western section of the creek, being in the location where the creek is currently piped.

In terms of the width of the corridor, Cumberland Ecology (**Appendix D**) state that these vegetation communities for Woodlands Creek (and Hewitts Creek) are restricted to narrow strips on alluvial soils and the proposed 30 metre core riparian zone is more than adequate to provide for the protection and enhancement of the future riparian vegetation. The extensive regeneration proposed for all riparian corridors and long-term active management of these EECs will enhance the communities on site and provide as much protection as the larger buffer proposed by DEC.

- Tramway Creek As noted in the SSS study, the Charles Hill report and the recommended final buffer line does not accord with the alignment of Sandon Drive or the rehabilitation works to Tramway Creek approved as part of Stages 2 to 6 and reflected in the VMP for Tramway Creek. The buffer coincides, in part, with the edge of the mapped EEC and is located closer to the EEC than the buffer recommended in the Connell Wagner/Sainty & Associates Flora and Fauna Assessment.

Cumberland Ecology, in their Flora and Fauna Assessment of the Concept Plan, note that the former EEC known as Sydney Coastal Estuary Swamp Forest Complex (SCESFC) is now listed as 3 separate EECs known as:

- Swamp Sclerophyll Forest;
- Swamp Oak Floodplain Forest; and
- Freshwater Wetlands.

Cumberland has relied upon the mapping previously carried out by Connell Wagner and Sainty & Associates in their Flora and Fauna Assessment dated 12 June 2001 as part of the Stockland submission to the COI. Cumberland Ecology note that within the mapped SCESFC that there could be patches that correspond to the Swamp Oak Floodplain Forest and Freshwater Wetland, however mapping of each EEC was not considered necessary for the purposes of impact assessment. The map therefore utilises the SCESFC mapping carried out by Connell Wagner and Sainty & Associates.

The map illustrates that there are small areas of EEC located within the APZs. The map also illustrates that these areas are within the Charles Hill buffer zone, Deed of Agreement boundary and VMP boundary. These variations are considered justified on the following grounds.

- In relation to Tramway Creek, the area of EEC required to be managed as an APZ is very minor. The incursion of the APZ into this area of EEC is to be offset by an amendment to the VMP to incorporate additional lands as discussed previously.
- In relation to Woodlands Creek, the sliver of EEC is within the proposed road reserve, is minor and located outside of the carriageway. The land is therefore contained on the riparian corridor side of the road. As discussed above, this area of EEC will be unavoidably affected by any development of the site, but will be reinstated and the impact will be off-set by a rehabilitation program for a much larger area.
- Where APZs coincide with the riparian corridors, the outcome will need to be a managed landscape, which can nonetheless contribute to the ecological value of the overall corridor. Stockland will submit details and a plan of management that will ensure ecological values are protected at the Project Plan stage for the development.

In regard to this issue, Cumberland Ecology provide specific comments in their response (refer to **Appendix D**). In summary, they advise:

- Management of the APZ areas will not greatly impact on the EECs as they are mostly outside the existing EEC areas and located partially within the buffer areas.
- Management of APZs will not impede on revegetation works and only the understorey vegetation will be fuel reduced. Further the requirements for canopy separation within the APZ will not be detrimental to the community as overall management will enhance the condition of the community.
- Integrity of the EECs will be retained and the APZs will increase the buffer to development.

- APZs around Tramway Creek will be managed under an amended VMP and can be managed for APZ purposes and to remove significant weeds that threaten native wetland vegetation.

ARV Component

Size of riparian corridor is justified in HLA Overview, State significant study and EA Report which highlight that the riparian corridor through ARV site is of sufficient width to maintain its ecological and hydrological values. Further, the concept plan provides for the improvement of the riparian corridor in terms of its habitat value and the quality and quantity of water flows. The size of the riparian buffers is considered adequate as explained in the flora and fauna assessment reports for ARV and Stocklands land, the riparian corridors proposed adequately provide for the maintenance of ecological functions and will therefore protect and allow for the enhancement of the EEC's.

The riparian buffers recommended in the COI report were recognised as guidelines and note that they need to be specific to ecosystems being managed. This requirement has been observed in principle and balanced with the area of developable land which is required to fund the regeneration and management of the corridors in the long term. This is explained in Section A.3 of the Flora and Fauna Assessment reports for the Stocklands and ARV sites.

The ecological function will not be compromised by the proposed development setbacks from the creeks. As explained in the Hill report, the Riparian Corridor Management Study offers guidelines, and the principles have been followed for the Concept Master Plan (pg 29). Since the time of the Hill report, more detailed design stages have resulted in the review of Flooding and Riparian Corridor issues (Brown 2006).

Issue 12 Riparian buffer widths should be as recommended by Col

ISSUE 12 Riparian buffer widths as proposed are not supported - should be as recommended by Col

Agency	DPI	Letter dated 3.8.06, page 1
	DEC	Letter dated 16.8.06, page 12

The Minister did not accept the Col findings and the Charles Hill Report is the appropriate reference base. Variations to the Charles Hill riparian buffer widths have been addressed in Issue 11 above.

Justification of the proposed riparian buffer widths in accordance the principles outlined in the Charles Hill report is provided in HLA Overview, State significant study and EA Report and is discussed further in this submission.

Issue 13 Lack of consultation during preparation of EAR or Hill report

ISSUE 13 Not consulted during preparation of EAR or Hill Report

Agency DNR Letter dated 3.8.06, page 2

The Director-General's requirements did not specifically require consultation during the preparation of the EAR. The Statements of Commitments indicate that consultation with relevant agencies would be undertaken during the exhibition period at the discretion of the applicant. This process was commenced, and DNR has now been consulted. It is anticipated that further consultation will be conducted as necessary during the project application phases.

Refer also to comments from Brown Consulting (refer to **Appendix B**).

Issue 14 Hewitts Creek FRMP not fully addressed

ISSUE 14 Hewitts Creek FRMP is not fully addressed and might affect Council's implementation of high priority solutions to existing flood problems

Agency DNR Letter dated 3.8.06, page 2

Further comments in regard to this issue are provided by Brown Consulting (refer **Appendix B**) and in a peer review undertaken by Cardno Forbes Rigby (refer **Appendix C**). Cardno Forbes Rigby were the authors of the Hewitts Creek FRMP and conclude that the flood assessment and preliminary design of Brown Consulting are consistent with the Hewitts Creek FRMP.

Issue 15 Flora and fauna assessments inadequate

ISSUE 15 Flora and Fauna Assessments inadequate

Agency DEC Letter dated 16.8.06, page 6

The DG Requirements required that the Environmental Assessment address the following matters in relation to biodiversity:

- 1. Demonstrate that providing vegetated riparian corridors will maintain, or reinstate where necessary, the ecological function of the riparian zone (including Swamp Sclerophyll Forest on Coastal Floodplain (SSFCF)). The design of these corridors should include consideration of how the corridor's geomorphic profile will influence downstream flow regimes and sedimentation regimes.*
- 2. Demonstrate that there are sufficient vegetated buffers to protect SSFCF from impacts of the development. This is to include identifying whether the proposal complies with DEC letter dated 16.08.06's preferred provision of a minimum vegetated buffer of 40 metres for all areas of SSFCF at Sandon Point and locating all*

development infrastructure and asset protection zones outside this buffer to and prohibited in the SSFCF.

3. *Demonstrate that the on-site treatment of stormwater to ensure that any discharge of the riparian corridor and/or ecological buffer is of a quality and flow regime that enhances the SSFCF.*

Cumberland Ecology's Flora and Fauna Impact Assessment specifically focused on the above DG Requirements and on additional issues identified in the EASR prepared by HLA Enviro-Sciences. There have been extensive studies previously undertaken, the most recent of which is the Flora and Fauna Assessments carried out by Connell Wagner and Sainty & Associates, and reviewed by Cumberland Ecology as part of their assessment of the Stockland lands. The only updated surveying required for the Stockland land was to determine whether the Green and Golden Bell Frog was present on the site. The results of this survey revealed that whilst there is appropriate habitat, no frogs were seen or heard calling.

Cumberland Ecology are of the opinion that aside from the additional surveying carried out by Cumberland Ecology for the Green & Golden Bell Frog, no other surveys or assessment was considered warranted due to the extensive previous studies.

In regard to the ARV lands it is considered that flora and fauna assessments are adequate. As explained in Section 3.2 of the Flora and Fauna Assessment report for the ARV site (Cumberland Ecology 2006) previous studies and a detailed habitat assessment have identified important habitat values and these areas have been protected.

Issue 16 Minimum 40m buffer to EECs clear of infrastructure and APZs

ISSUE 16 Require minimum 40m buffer to EECs exclusive of APZs, roads and other infrastructure

Agency DEC Letter dated 16.8.06, pages 9 & 12

DEC contend that the proposal has the potential to impact on the EECs, including clearing, impacts of APZs, re-engineering of creeks, inadequate or no vegetated buffer zones and development infrastructure within riparian zones containing EECs.

As stated in Issue 1, increasing the width of the riparian corridors generally, which would include the suggested 40m wide vegetated buffers either side of the EECs will severely impact upon the residual developable land. For example, such a buffer would remove approximately half of the proposed allotments south of the ECC in Tramway Creek.

The DEC submission makes the comment that the "*proposal involves extensive reengineering of the Woodlands and Hewitts Creeks which is likely to impact on EECs on and downstream of the creeks.*" The creeks are highly disturbed. As discussed earlier and in previous submissions, Woodlands Creek is largely piped and Hewitts Creek has been previously engineered. In order to restore these creeks to as near a natural state as possible, engineering works are essential and will require works to be

undertaken within parts of the EEC. The alternative is to leave the creeks piped and degraded, therefore a balanced approach is required. Essentially the extent of works proposed is necessary regardless of the width of the riparian corridor or vegetated buffer.

The proposal achieves this balance by providing a 50m wide riparian corridor comprising a 30m wide core riparian zone with a 10m wide buffer either side of the creeks within the Stockland site. Development infrastructure, including roads, APZs and water quality infrastructure are all located outside the 30m core riparian zone. These elements will also serve to provide an additional buffer to the corridors and EECs and particularly to reduce any edge effects.

In regard to the ARV site a 40m vegetated buffer to all EECs is not considered necessary. Refer to Section 4 of the Flora and Fauna Assessment for an Aged Care Facility (Cumberland Ecology 2006).

ABORIGINAL CULTURAL HERITAGE

Issue 17 Further consultation regarding Women's Area

ISSUE 17 *Clarify whether any further consultation has occurred in regard to Women's Area. Further independent archaeological study might clarify*

Agency DoP Memo of 1.9.06, page 3

At the time of preparing the EAR, it was noted that the Aboriginal Heritage Study commissioned by the DoP had not been finalised. The *Sandon Point Aboriginal Cultural Heritage Assessment* prepared by Stuart Huys, 2006 has now been completed which included a significant level of consultation with Aboriginal representatives into the Women's Area.

In relation to the Turpentine Forest and Womens Area on Cookson's Land (Lot 2 DP 224431), the report records uncertainties surrounding the location and details of the Women's Area, and knowledge is mostly second hand. Stuart Huys recognises at page 73 of the recommendations that:

"The views and information provided by the Aboriginal representatives relating to the Turpentine Forest, Wilkies Track and the 'Womens Area' are all cultural landscape significance statements that cannot feasibly be assessed by or tested against the available archaeological evidence for the area. It is also very unlikely that any further archaeological investigations could contribute any new and meaningful information to this assessment."

Stuart Huys notes that an *"anthropological study may help to further clarify the nature and extent of sites such as the Women's Area."* His recommendations are not specific, but open, and require only consideration to be given to an independent anthropological

study that would focus on ascertaining the validity and extent of anthropological information for the Women's area.

Notwithstanding, the Statement of Commitments provides for the incorporation of a heritage interpretative facility within the development, the details of which are to be provided at the Project Plan application stage. This could allow for inclusion and recognition of any additional aspects of Aboriginal cultural heritage confirmed by further studies discussed above, should they be available and confirm any matters of significance.

Further discussion on the need for further investigations into the Women's Area is provided in Susan McIntyre-Tamwoy's comments at **Appendix H**.

DoP/Huys study presents sufficient information, on any reasonable analysis, to conclude that no Women's site occurs on this land. No further work is required. This issue does not represent a constraint to the development. .

Issue 18 Aboriginal cultural significant areas and zone boundary finalization

ISSUE 18 Zone boundaries should not be finalised until resolution of potential aboriginal cultural significant areas within ARV site

Cookson Plibrico site - preferred option is to assume the cultural heritage values on the site and protect the area within an appropriate zoning and Plan of Management. Recommends that Turpentine Forest remains linked to Cookson Creek under one environment protection zoning 7(a) with APZs, pollution ponds, roads and other development infrastructure outside the 7(a) zone. The 7(a) zone would include the north-east corner of identified Class 1 bird habitat. Protection of land to the east of the Turpentine Forest would be consistent with previous DEC recommendations and the COI report.

Agency DEC Letter dated 16.8.06, page 4

Heritage has been addressed appropriately at this concept plan stage as described in section 7.4 of the JBA EAR for the ARV component and in the statement of commitments.

Unresolved issues relate to an untested PAD and an alleged Aboriginal women's site. The PAD can be tested at any time without the need for a DEC's.87 Permit. The PAD has not been tested to date in case there was any geographic overlap with alleged Women's area. DoP briefed Huys [in part] to resolve this issue. Huys report fails to accurately synthesise previous data [e.g., an area believed to contain burials Huys report maps areas where burials had been identified]. Huys report fails to analyse the information he derived from interviews or to give appropriate credence and weighting to the local Wadi Wadi women who stated there is not such an area at Sandon Point. On the basis of the information to date and the statements by local aboriginal women, it is

reasonable to conclude there is no specific Women's area at Sandon Point, but that some women from outside the area have come to believe there is one here.

There is no current basis to apply Aboriginal cultural heritage values to this land other than in the most general way, as a resource zone, which represents no constraint to development or to inform zoning boundaries.

Turpentine Forest is proposed to be linked to Cooksons Creek under one 7(a) zoning. Turpentine forest will remain linked to the Cooksons Creek Riparian Zone. A corridor of core riparian habitat is being protected and restored along the creek that flows east of the Turpentine Forest, as shown in the Concept Plan. Class 1 bird habitat will be retained, although not in entirety. The regeneration and ongoing active management of the riparian zones will increase the area of bird habitat and provide better connectivity. Requirement for ponds and all roadways to be outside 7(a) zone is not practical or reasonable in the circumstances. Zoning of land for protection to the east of the Turpentine Forest is not consistent with Hill report.

Issue 19 Zone boundaries to align with Col recommendations

ISSUE 19 Zone boundaries should align with Col recommendations

Agency DEC Letter dated 16.8.06

DEC refer to Stuart Huys' report which references the riparian corridor widths recommended by the Col.

Stuart Huy's report does not reference Charles Hill's recommendations. The assessment relies heavily on the views expressed from interviews conducted by Stuart Huys, which have all referenced the Col findings and not referenced any findings in the Charles Hill report. To this extent, the Stuart Huys report is considered irrelevant to the issue of appropriate riparian corridor widths.

Refer to Susan McIntyre-Tamwoy's comments at **Appendix H** for further discussion on this issue.

Refer also to Issue 18 for JBA's response for the ARV component.

HERITAGE GENERALLY

Issue 20 Heritage Implementation Plan

ISSUE 20 Heritage Implementation Plan recommended

Agency Heritage Office Letter dated 3.8.06, page 3

Stockland's Statement of Commitments includes the adaptation of the Heritage Interpretation Plan (Godden Mackay Logan 2001) to suit the approved development. Stockland has committed to undertaking the Heritage Implementation Plan at construction certificate stage.

Refer to Susan McIntyre-Tamwoy's comments at **Appendix H** for further discussion on this issue.

ARV and Stockland agree this can be included in the statement of commitments.

Issue 21 Former history of Woodland Cottage

ISSUE 21 Address former history of Woodland Cottage through interpretation

Agency Heritage Office Letter dated 3.8.06, page 3

This Heritage Interpretation Plan referred to above in Issue 20 plan would relate to both the former Thirroul Brickworks and Woodlands Cottage. Again, this can be addressed at the construction certificate stage.

Refer to Susan McIntyre-Tamwoy's comments at **Appendix H** for further discussion on this issue. Susan McIntyre-Tamwoy considered the proposed condition by the Heritage Office that the Heritage Interpretation Plan include Woodlands Cottage is appropriate, however, we note that she does not agree with the need for the Heritage Interpretation Plan to be submitted to the Heritage Council for their approval.

ARV and Stockland agree this can be included in the statement of commitments.

Issue 22 Archaeological work not undertaken, as recommended

ISSUE 22 Disappointed that further archaeological work not undertaken as recommended in the Heritage Office letter dated 6 April 2006

Agency Heritage Office Letter dated 3.8.06, page 3

The Heritage Office letter dated 6 April 2006 recommended that the former Woodlands Cottage and the former Thirroul Brickworks be the subject of further research and field work to determine their archaeological potential.

The DG requirements did not require any further investigations as part of the Environmental Assessment process, but required that both sites are considered and recognised appropriately. The EA report states that both sites have been subjected to past disturbances, however, Stockland is committed to undertaking further archaeological investigations on the northern part of Stockland's land (being the site of the former brickworks and Woodlands Cottage) should archaeological artifacts be discovered during construction.

This above approach is consistent with the recommendations of the *Submission to the Commission of Inquiry – European Heritage* prepared by Graham Brooks and Associates which the Heritage Office notes includes a recommendation that if preliminary investigations are not carried out, any development works in the area of Woodlands Cottage involving excavation will require an excavation permit and will need to be monitored by a qualified archaeologist.

However, Stockland's Statement of Commitment also extends to the former Thirroul Brickworks. It is also noted that the recommendation provided by Graham Brooks and Associates was made prior to the Part 3A application process being incorporated into the EPA Act which allows for the Minister to deal with some approvals required under other Acts. An excavation permit under Section 139 of the Heritage Act is therefore not necessary.

Refer to Susan McIntyre-Tamwoy's comments at **Appendix H** for further discussion on this issue.

Archaeological issues have been addressed appropriately at this stage of concept plan.

Issue 23 Archaeological requirements not addressed

ISSUE 23 Archaeological requirements in letter of April 2006 not addressed

Agency Heritage Office Letter dated 3.8.06, page 3

The Heritage Office submission proposes two conditions to address the concerns addressed in the above Issues. In our opinion the intent of these suggested conditions is already covered in the Statement of Commitment and this can be clarified if required. It is considered that Heritage has been addressed appropriately at this concept plan stage in the EA Reports.

Refer to Susan McIntyre-Tamwoy's comments at **Appendix H** for further discussion on this issue and suggested replacement condition.

STAGING

Issue 24 Timing of construction of north-south link road

ISSUE 24 Provide details for the timing for constructing the north-south link road to ensure it will be publicly available as soon as practicable and preferably within the first or second stage of either development

Agency DoP Memo of 1.9.06, page 3

The proposal provides a staging sequence which will provide for the construction of the Wrexham Road extension and bridge over Hewitts Creek within Stage 1. This incorporates a substantial component of the costs associated with the construction of the full length of the north-south link road, but has a specific nexus with the residential allotments to be created in Stage 1.

The construction of additional components of the north-south link road independent of the creation of residential lots in subsequent stages, is cost-prohibitive and does not have a nexus with the requirements of any specific development. The traffic assessments undertaken did not identify any concerns associated with the development of all stages north of the ARV site prior to implementation of the link road. The link road is not an access denied road, and will provide frontage to future allotments. In such a situation, it is neither ideally practical nor cost-efficient to construct the road without also providing for the creation of abutting residential allotments. Such a consequent alternate staging pattern would not provide for the orderly development of the site, would not meet the preferred marketing aims of Stockland, and would unnecessarily exacerbate potential conflict between temporary construction traffic and through traffic.

In summary, the most contentious and costly component of the north-south link road is the Wrexham Road extension, and this is committed to within Stage 1 of the Stockland development. All subsequent components of the north-south link road will be constructed in an orderly manner in conjunction with each subsequent stage of the subdivision development. Each of Stages 1, 3 and 5 are dependent upon the construction of a component of the north-south link road, as is the whole of the ARV development, and is therefore in the interest of the developer to ensure that the development proceeds as quickly as possible. Further comments in regard to the implications of the link road not being implemented, with particular reference to the Wrexham Road extension, are provided at Issue 45.

The north-south road adjacent to the ARV site is proposed to be constructed as part of the second stage of development. This will be included in the statement of commitments.

TREE REMOVAL

Issue 25 Removal of Casuarina trees

ISSUE 25 *Clarify whether the Casuarinas trees along the eastern site boundary between Woodlands Creek and Wilkes walk are to be removed*

Agency **DoP** **Memo of 1.9.06, page 3**

The casuarinas located along the eastern boundary of the site between Woodlands Creek and Wilkes walk are in the location of the proposed road. The Casuarinas are regrowth and are not considered to be significant vegetation. The concept plan application seeks approval for the removal of all of these trees at this stage, however,

when final documentation is prepared at the construction certificate stage, Stockland will confirm what trees can be retained.

BUSHFIRE

Issue 26 APZs deviation from Planning for Bushfire Guidelines

ISSUE 26 APZs deviate from requirements of Planning for Bushfire Guidelines. 20m APZs required from riparian corridors

Agency RFS letter dated 18.07.06

AVK Environmental Management has liaised with the RFS regarding their submission dated 18 July 2006, and confirmed that the majority of the comments relate to the ARV component of the development. AVK's response to the submission dated 13 September 2006 is attached as **Appendix E** to this report.

In relation to the Stockland component a 20m wide APZ is provided clear of the riparian corridors, except in relation to Tramway Creek. The APZs comprise managed sections of road reserve immediately adjoining the riparian buffers, perimeter roads, and building setbacks.

In regard to Tramway Creek, the APZ will extend into the future riparian corridor but will only marginally affect the Vegetation Management Plan (VMP) for Tramway creek approved as part of the Stages 1 to 6 development (refer to Section 7.7.4 and Figure 14 of the EAR). To compensate for this the VMP will be amended to incorporate additional contiguous land located in the Tramway Creek corridor and revegetation and maintenance works will be extended.

In regard to the ARV component of the development BES advise the issue raised by the RFS is correct for the riparian zones only. The APZs proposed for the riparian zones range between 10 and 15 m in width, which deviate from the 'Planning for Bushfire Protection' minimum requirement of 20 m for low risk vegetation. A smaller APZ was proposed as it was assessed that the riparian zones did not pose a fire risk equivalent to that planned for within the Guidelines for 'forest remnants'. This merit based approach for very low bushfire risk sites (i.e. APZ smaller than 20 m) has been supported by RFS in many previous integrated development applications within Sydney, Illawarra and South Coast regions.

BES note the requirement for 20 m APZ for riparian corridors (remnant areas of bushland) is RFS policy which relates to the requirements of 'Planning for Bushfire Protection', which can be negotiated based on a site's merits (i.e. if the site is deemed to have a bushfire risk much less than that planned for forest remnants within 'Planning for Bushfire Protection') via the appropriate consultation.

Issue 27 Maintenance of APZs outside individual properties

ISSUE 27 Legally binding mechanisms required for maintenance of APZs outside of individual properties

Agency RFS letter dated 18.07.06

AVK Environmental Management note in their letter (refer **Appendix E**) that those portions of the APZ outside lot boundaries or road reserves are relevant to Stage 5 of the Stockland component. AVK Environmental Management correctly notes that this will be addressed by an amended Vegetation Management Plan as detailed in Section 7.7.4 of the Environmental Assessment Report prepared by Don Fox Planning.

ARV concept similarly includes APZ encroachment into the Tramway Creek corridor owned by Stockland. The amendment to the VMP will also address this issue for the ARV site.

Future ownership and maintenance arrangements are also included in the draft planning agreement.

Issue 28 Compliance of roads servicing more than 4 dwellings

ISSUE 28 Roads servicing more than 4 dwellings need to comply with 4.3.1 of Guidelines

Agency RFS letter dated 18.07.06

AVK Environmental Management note in their letter at **Appendix E** that the perimeter roads (park edge roads) provide a 5.5m wide carriageway with a 2.5m wide parking bay on one side of the road. AVK Environmental Management states “*that this would meet the RFS requirements if parking is restricted to the parking bays on one side of the road. Although the width of the perimeter road reserves would be less than the 20m required for Planning for Bushfire Protection 2001, the proposed buildings fronting the perimeter roads are deep enough to incorporate a building setback to make up the 20m wide Asset Protection Zone.*”

The Concept Plan illustrates the various carriageway widths and the park edge (perimeter) roads are proposed to have a parking bay on one side only, satisfying the above statement by AVK Environmental Management. We therefore understand that the RFS are agreeable to this outcome.

The Statement of Commitments can be amended accordingly to reflect this intention and ensure that the Project Plan maintains this design feature. This will be addressed with the Preferred Project Plan report.

In regard to the ARV proposal the BES report recommends compliance with ‘Planning for Bushfire Protection’ requirements for ‘private property access’ roads. The RFS comment to provide roads in compliance with ‘public access’ roads (due to servicing

more than 4 dwellings) relates to a relatively new RFS policy not covered within 'Planning for Bushfire Protection' or other related legislation. The primary difference between the two is the requirement for a public road carriageway to be at least 5.5 m in width (with parking and road-side service restrictions), and a private property access road to have a carriageway at least 4 m in width.

ACQUISITION CLAUSE

Issue 29 Requirement for acquisition clauses questioned

ISSUE 29 Clarify why acquisition clauses are proposed

Agency DoP Memo of 1.9.06, page 2

The amendment of Clause 35 of Wollongong LEP 1990 was proposed to apply to both the 6(a) and 7(a) zoned land. This proposed amendment is not considered necessary, but has simply been proposed to maintain consistency with the recommendations of the Charles Hill report (paragraph 6.4, page 9 of the Charles Hill Report). Stockland do not press the amendment to Clause 35, and leave the decision to undertake this with the DoP.

If the Planning Agreement is entered into, then this possible amendment becomes superfluous in any case, as the land will transfer to Council in accordance with that mechanism (refer to Issue 51).

WATER QUALITY/ QUANTITY

Issue 30 Manning's "roughness" values as recommended by Agencies

ISSUE 30 Justify why the Manning's "roughness" values recommended by the Agencies has not be used. Sensitivity analysis recommended to demonstrate what impacts on the development might arise from using Agency "roughness" values.

Confirm that parameters used to calculate peak design flows, specifically the 1% AEP and PMF events have not been underestimated. Plans at 1:2000 scale required showing

- 1. the existing 1% AEP and PMF levels on the site.***
- 2. the 1% AEP and PMF levels overlay on the concept plan.***
- 3. The Surface Water Management Report for the Anglican Retirement Village should be revised as the figure for the 1% AEP peak discharge into Tramway Creek was incorrect***

(should be 56.7m³/s).

Agency DoP Memo of 1.9.06, page 2
WCC Letter dated 1.9.06

Responses in regard to the question of the appropriate Manning's roughness values are provided by Brown Consulting and in the peer review by Cardno Forbes Rigby (refer to **Appendices B and C**). These responses concluded that the appropriate Manning's roughness values have been utilized and these are consistent with those applied in the Hewitts Creek Flood Risk Management Plan. A plan depicting the 100 year ARI (1% AEP) flood and PMF extents, overlain on the concept plan, is contained in Brown Consulting's response at **Appendix B**. The plans are not drawn to scale and a scaled plan at 1:2000 would not assist any further in understanding the flood extents. Note that this plan confirms the information contained within the EAR and previously submitted to the Col.

Peak flood discharges were sourced from Council's Hewitts Creek Flood Study. These will be updated if required at the more detail Project Plan or Construction Certificate stages. To be included in statement of commitments.

Refer also to surface water management report in EA report for the ARV component. Plans have been provided for ARV site.

Issue 31 Compensatory measures for impacts to the floodplain

ISSUE 31 *What compensatory measures proposed to ensure site modifications to reducing flooding on site will not impact elsewhere in the floodplain*

Agency WCC Letter of 1.9.06

As evident from the assessment of Brown Consulting, and confirmed in the peer review by Cardno Forbes Rigby (refer to **Appendix C**), the proposed development will have no impact elsewhere in the floodplain. Therefore no compensatory measures, other than those built into the original design of the reconstructed creek profiles, are necessary.

Issue 32 consider larger culverts under railway line

ISSUE 32 *Should consider proposed larger culverts under rail line*

Agency WCC Letter of 1.9.06, page 4
DoP Memo of 1.9.06, page 2

This has been reviewed by Brown Consulting (refer **Appendix B**) and commented upon at Point 1 of the peer review by Cardno Forbes Rigby (refer **Appendix C**). The design of the proposed reconstructed creek channels can accommodate the augmented culverts under the railway line recommended as part of the Hewitts Creek FRMP. Appropriate details will be incorporated in the detailed design at the Construction Certificate stage.

Larger culverts and their impact on conveyance of flows through the site will also be considered at the detailed design stage, if these are planned for Cooksons Creek.

To be included in statements of commitments of both proponents.

Issue 33 Drainage not to enter rail corridor

ISSUE 33 Drainage must be adequate and not enter rail corridor

Agency RailCorp letter of 25.08.06, (Item 7)

RailCorp states that their comments in relation to drainage are general and propose conditions to be placed on a development consent. Stockland has no objection to the terms of the suggested conditions and will also undertake to consult with and seek approval from RailCorp for any proposed drainage to be discharged into the rail corridor. This can be confirmed as part of the Statement of Commitments

ARV also agree with the RailCorp recommendation and for this to be included in the statement of commitments.

Issue 34 Proposed vegetated riparian corridors and flood impact west of rail line

ISSUE 34 Confirm proposed vegetated riparian corridors does not cause flood waters to back up and impact on areas west of the rail line

Agency WCC Letter of 1.9.06, page 4

This issue is reviewed within the responses of Brown Consulting and Cardno Forbes Rigby (refer **Appendices B** and **C**). The original flood assessment and subsequent reviews confirm that the proposed reconstructed creek channels can accommodate appropriate flow and not result in any upstream impacts.

In regard to the relatively more minor watercourse of Cooksons Creek, ARV will include in their statement of commitments that a sensitivity assessment of roughness assumptions, on account of vegetation, will be undertaken at the detailed design stage

Issue 35 Access to and from the site during PMF

ISSUE 35 Access to and from the site should always be available during the PMF event.

Impact of PMF should be taken into account on the proposed development to ensure it retains safe particularly from any overlapping of the railway-line

Agency WCC Letter of 1.9.06, page 4

The riparian corridors and abutting roads are to contain the PMF. Therefore in the worst case flood, the abutting road may be marginally affected but not residential lots, refer to **Appendix I**.

Due to the nature of the catchment and floodplain, floods are typically of short duration. If required, refuge can be obtained within residential dwellings during a PMF which will be totally flood free. The inability to evacuate is acceptable for the subject floodplain as specified by Schedule 4 of Wollongong DCP 54, which applies specifically to the Hewitts Creek Floodplain.

Similarly, for the ARV site a “stay-put/vertical evacuation” policy may be more appropriate and will be included in statement of commitments. The final flood evacuation strategy will be developed during the detailed design stage of the ARV development having regard to its specific purpose to accommodate older and disabled persons.

Issue 36 100 year plus 0.5 freeboard flood planning level

ISSUE 36 Adopt 100yr plus 0.5m freeboard as flood planning level

Agency WCC Letter of 1.9.06

This issue was contained in WCC’s draft submission to the DoP, however was removed from their final submission. This issue is nonetheless addressed below.

Brown Consulting confirms in their response at **Appendix B** that the 100yr plus 0.5m freeboard has been adopted. The floor levels of future residential buildings are to comply with the flood planning level for residential floor levels, being 0.5m above the 100 year flood. (Refer to Schedule 4 of DCP 54). As finished ground levels are to be above the 100yr flood level, this criterion will be readily achievable.

In regard to the ARV development, final floor levels will be fixed during the detailed design stage. Flood planning levels that comply with the Council standards will be included in the statement of commitments.

Issue 37 Method and location of treating stormwater originating from site

ISSUE 37 *Clarify method and location of treating all stormwater originating on-site. Questions whether MUSIC modeling includes only roof water and not all run-off from individual sites*

Clarification required on the role and location of swales in the MUSIC modeling

Agency DoP Memo of 1.9.06, page 4

Refer to Brown Consulting's response (**Appendix B**) which confirms that the MUSIC modeling has utilised the whole of the sub catchments, not just roof areas.

The swales have not been relied upon in the MUSIC modeling; however the opportunity to incorporate swales will be confirmed at project plan stage.

Method and location of stormwater treatment is provided in stormwater concept plan in JBA EA report for the ARV component. Swales are provided in stormwater concept plan in JBA EA report for the ARV component.

Issue 38 Impacts of stormwater design and ecological buffer impacts

ISSUE 38 *Impacts of stormwater design should be reviewed to ensure ecological buffer is not compromised*

Agency DPI Letter dated 3.8.06, pages 1 & 2

Refer to Brown Consulting's response (**Appendix B**) and Cardno Forbes Rigby's review (**Appendix C**) in regard to the Stockland component.

In regard to the ARV component, the locations of the proposed stormwater management infrastructure are considered appropriate. The proposed stormwater management infrastructure, which includes; biofiltration basins, gross pollutant traps and swales, within the 40 metre wide riparian corridors of the creeks, but not within the 30 metre wide core riparian protection zones, have been designed using water sensitive design and include the future planting of native reeds and macrophytes appropriate to the adjoining Ecological Community. This will ensure that the ecological communities are retained and protected within the core riparian protection zones, while also being enhanced through the planting of species which are part of the community.

Issue 39 Water quality pond outside riparian corridor

ISSUE 39 Water quality pond should be outside riparian corridor

Agency DEC Letter dated 16.8.06, pages 9 & 12

The water quality basins are located outside the proposed core riparian zones, and are located within the additional buffer to the core riparian zone. Refer to Brown Consulting's response (**Appendix B**) in regard to the Stockland component.

Overall, the locations of the pollutions ponds is appropriate, as explained above. The requirement for ponds to be outside 7(a) zone is not practical or reasonable in the circumstances.

Issue 40 Water quality monitoring during construction

ISSUE 40 Water quality monitoring should occur during construction

Agency DPI Letter dated 3.8.06, page 2

Such water quality monitoring has been undertaken on Tramway Creek as part of the subdivision developments of Stages 1 to 6. This is considered to be a reasonable requirement.

A water-monitoring plan will be developed as part of the detailed design stage. This will monitor water quality during and after construction. To be included in the statements of commitments **to be** incorporated either at the concept plan or project plan stages.

Issue 41 Acid sulfate soil management plan

ISSUE 41 Acid Sulfate Soils Management Plan required

Agency DPI Letter dated 3.8.06, page 2

Network Geotechnics Pty Ltd carried out a geotechnical investigation in February 2003 as part of the Stockland submission to the COI. This investigation carried out soil testing for potential acid sulfate soils (PASS). Two tests were carried out and *"have not identified any potential acid sulfate soils (PASS). This is consistent with similar testing undertaken recently for the nearby Stage 1 to 6 McCauleys Beach Subdivision."* (Network Geotechnics, 2003).

However, Network Geotechnics also note that *"notwithstanding the above, it is recommended that further sampling and indicator PASS testing be undertaken on alluvial and residual soils from low lying portions of the site during future geotechnical studies in support of residential or other development."*

The COI was satisfied *"that well proven methods are available to ensure the soils on the site are geotechnically suitable for residential and associated infrastructure"*

development.” In relation to testing for acid sulfate soils, the COI noted that “testing for acid sulphate soils would be necessary for any soil material excavated from low lying or alluvial areas”, consistent with the above qualification by Network Geotechnics.

To this end, Stockland will amend their Statement of Commitments to include an undertaking to carry out further sampling on the alluvial and residual soils from low lying portions of the site. If PASS are identified on land proposed for residential development, an acid sulfate management plan will be prepared prior to the issue of a construction certificate.

An acid sulphate management plan will be developed as part of detailed design of the ARV proposal. This will address management of PASS, during construction and will be included in statement of commitments.

Issue 42 Reference to Flood Development Manual

ISSUE 42 Flood Development Manual not referenced

Agency DEC Letter dated 16.8.06, page 15

The Floodplain Development Manual 2005 has evolved from two preceding versions of the Manual, the first being the Floodplain Development Manual adopted in 1986 by the State Government. The Floodplain Development Manual provides guidelines for local government in implementing the State Government's flood policies. The State Government Flood Policy, first adopted in 1984, imposed the responsibility for floodplain management in NSW upon local government, and at the same time providing indemnity to councils for advice given and actions taken in regard to flood risk management provided that councils act in good faith. In accordance with Section 733 of the Local Government Act 1993, unless proven otherwise, councils are considered to be acting in good faith, if they act in accordance with the Floodplain Development Manual.

The Floodplain Development Manual provides a process to develop Floodplain Risk Management Plans (FRMPs) for each floodplain in a local government area, which reflects community tolerance towards flood risk. The ultimate outcome required by the Floodplain Development Manual, is the production and adoption of a FRMP in accordance with a predefined process, and thereafter the implementation of the plan.

Council has undertaken a process in accordance with the Floodplain Development Manual and produced a FRMP for the floodplain within which the subject site is located (the Hewitts Creek FRMP). The production of this FRMP was overseen by a Floodplain Committee, represented by various agencies including the DNR. The Hewitts Creek FRMP is referred to within the EAR, in particular with reference to various flood mitigation recommendations. These flood mitigation measures are inclusive of planning controls which have been subsequently embodied within the Wollongong DCP 54 – Managing Our Flood Risk. Where relevant, the provisions of DCP 54 have been taken into consideration but primarily relate to future residential development and accordingly, will be further considered in subsequent applications.

Brown Consulting comments further in regard to this issue at Item 14 of their response (refer **Appendix B**). Brown Consulting outlines all relevant floodplain mitigation works identified in the Hewitts Creek FRMP, concluding that the proposed subdivision will not preclude such works being undertaken.

We are unaware of any proposed flood mitigation measures identified on Cooksons Creek.

Issue 43 Reference to section 117 Direction No. 15 regarding flood prone land

ISSUE 43 Section 117 Direction No.15 – Flood Prone Land is not addressed

Agency DNR Letter dated 3.8.06, page 3

This comment could loosely apply to only the SSS Study. Direction No. 15 – Flood Prone Land applies when a council prepares a draft LEP that creates, removes or alters a zone or a provision that affects flood prone land. Direction No. 15 applies to a council and not the Minister. In the case of the SSS study, the Minister is required to amend SEPP (Major Projects) 2005 by the inclusion of the subject site within Schedule 3 of the SEPP.

Nevertheless, the SSS study proposes an increase in the land zoned Environmental Protection to widen the riparian corridors, consequently reducing the area currently zoned for urban development under Wollongong LEP 1990. The proposal therefore is not inconsistent with Section 117 Direction No. 15 (notwithstanding its irrelevance).

Further, as demonstrated in the EAR and discussed above, the proposal complies with the Hewitt's Creek FRMP as relevant, and would therefore be consistent with the Direction.

TRAFFIC

Issue 44 Traffic impacts from opening of Sea Cliff Bridge

ISSUE 44 *Clarify whether Traffic Assessment has factored in the opening of Sea Cliff Bridge on 12 December 2005. If not, reassess traffic impacts*

Agency **DoP** **Memo of 1.9.06, page 4**

Wollongong City Council has been consulted regarding the traffic model developed by Council and referenced in the traffic assessment contained in the EAR. The traffic assessments are based on a number of future road network scenarios modelled by Gabites Porter. Council has confirmed that the traffic model assumed that the Sea Cliff Bridge (Lawrence Hargrave Drive) was always open. The traffic volumes on Lawrence Hargrave Drive were also forecast beyond the 12 December 2005 when the bridge reopened.

Council has also confirmed that the traffic volumes prior to the closure of the road indicated a constant increasing trend. When the road was closed, the traffic volumes dropped. When the road re-opened, traffic volumes increased which was assumed to be due to the initial curiosity and publicity surrounding its re-opening. Council has confirmed that traffic counts by the RTA after the opening of the Sea Cliff Bridge indicate that the traffic volumes have returned to a similar trend prior to its closure.

The assessment carried out by Christopher Stapleton Consulting utilises the Wollongong City Council traffic model (as discussed above) and reassessment factoring in the opening of the Sea Cliff Bridge is therefore unnecessary.

Similarly CHC conclude that the modelling indicated that traffic movements are unaffected by network changes outside the immediate vicinity of the Sandon Point site. Further analysis is not considered necessary.

Issue 45 Implications of delay of north-south link road

ISSUE 45 *Assess implications of Wrexham Road is delayed or does not proceed*

Agency **WCC** **Letter of 1.9.06**

While Stockland have committed to the north south link road which incorporates the extension of Wrexham Road, Council is effectively in control of the outcome of the Wrexham Road connection. In order for Stockland to construct the Wrexham Road extension, owner's consent from Wollongong Council and the State Rail Authority will be required. A formal application for the road works is to be provided at the project plan application stage, in accordance with the Statement of Commitments.

Discussions have commenced with State Rail Authority and no constraint to obtaining owner's consent, from the Authority is identified. This component of the process would

be similar to that undertaken for works associated with the Point Street rail bridge, which was subject to works undertaken in association with stages 1 to 6.

In regard to owner's consent from Wollongong City Council, this cannot be issued until such time as the land is reclassified as "operational land" in accordance with the Local Government Act, 1993. Council has commenced this process, which is expected to be completed before the end of 2006, prior to approval for a project plan application being required. In previous correspondence Council has indicated in principle that owner's consent will be provided subject to resolution of issues associated with monetary recompense, which are being resolved at present.

It is noted that notwithstanding Council's desire for some monetary recompense prior to granting owner's consent to Stockland for the construction of the Wrexham Road extension, Council has planning policies which reinforce a commitment to the Wrexham Road extension. With the ceasing of industrial and quarrying activities on the site in the early 1990's, Council commenced a process for the rezoning of the subject site for residential development in 1992. A local environmental study and a review was prepared on behalf of Council, culminating in the rezoning of the land in 1986 and the adoption of a site specific DCP (DCP 94/17) in February 1997. Clause 8a of DCP 94/17 requires vehicular access to and within the site to be in accordance with Attachment 2, which is a masterplan for the Sandon Point site identifying a northern link to Lawrence Hargrave Drive via the Wrexham Road extension. The desirability of the north-south link providing connectivity to the north across the railway line is noted in the "Sandon Point Traffic Impact Study" 2002 (Gabites Porter) prepared for Council.

In addition to increasing connectivity and achieving a site planning outcome for the Sandon Point site, Council has recognised the benefits of the Wrexham Road connection in association with improved accessibility to the Thomas Gibson Reserve located to the north of the site. In a Council Officer's report to Council of 11 June 2002, it is noted that *"the construction of a public road, from existing Wrexham Road rail bridge to the proposed car park will enable Council to implement the construction of the new car park which is a critical component for opening up the southern area of the park by formal public access"*. On that basis, the Council Officer's report recommended the allocation of approximately \$100,000 of Council funds for the construction of the access road and car park.

Further, the Wrexham Road connection, required for the north south link, is a recommendation of the Charles Hill report.

Stockland has obtained preliminary advice regarding traffic impacts in the event that the Wrexham Road link cannot be built. Based on existing modelling the Point Street access could accommodate the traffic generation of the combined ARV and Stockland development from a simple capacity perspective. This, however, would have the disadvantage of requiring ameliorative traffic management measures in Point Street, the loss of a potential bus route and no direct vehicular connectivity to the north. It is not an outcome desired by the proponents and is effectively in the hands of Council, pending resolution of demands for monetary recompense in return for the opportunity to construct the road.

In the unlikely event that the Wrexham Road connection did not eventuate, access for ARV would be off Sturdee Avenue and the proposed Sandon Point Drive extension.

Accordingly, while we have assessed the implications of the Wrexham Road connection not occurring, and conclude that the development could nonetheless operate in a manner acceptable on traffic grounds, there are considerable reasons to support the conclusion that the Wrexham Road connection will eventuate, and at this stage Stockland (with the support of ARV) is committed to seeking approval for the construction of this road at the project plan application stage.

Issue 46 Impact of additional traffic lights on Lawrence Hargrave/Hwy intersection

ISSUE 46 Assess impact of additional traffic lights on Lawrence Hargrave/Hwy Intersection

Agency WCC Letter of 1.9.06

The analysis by CHC indicates that intersections will operate at a Level of Service C or better. Further analysis will be completed as part of the detailed design for this intersection. This is not required at this stage.

Issue 47 Insufficient information to make assessment

ISSUE 47 Insufficient information to make assessment

Agency RTA undated

Additional information is currently being prepared as part of the detailed design phase of the project. This does not preclude the plans as they currently stand being approved.

Issue 48 RTA requirements not assessed

ISSUE 48 RTA requirements in letter of 20.4.06 not assessed

Agency RTA undated

Additional information is currently being prepared as part of the detailed design phase of the project. This does not preclude the plans as they currently stand being approved. In relation to specific RTA issues:

Further detailed intersection modelling of the Princes Hwy / Lawrence Hargrave Drive intersection will be completed following finalisation of the internal road network.

Access points to the classified road network have been minimised in accordance with the recommendations of the Hill report.

The design of the road network is in accordance with appropriate standards.

Alternative servicing by buses has been accommodated in the design of the north – south link road.

Issue 49 Concern regarding increased traffic

ISSUE 49 Concerned re increased traffic at Sturdee/ Beattie and Hwy due to poor sight distances. Consider alternative access arrangements

Agency RTA undated

Following completion of the project as proposed, there will be no additional traffic off Beattie Ave and Sturdee Ave as the bridge is to be converted to pedestrian / cyclist use.

Issue 50 Regional Traffic Committee to consider application

ISSUE 50 Application needs to be considered by Regional Traffic Committee

Agency RTA undated

SEPP 11 – Traffic Generating Developments applies to Part 3A projects. Clause 7(3) of SEPP 11 requires the consent authority (in this case the Minister for Planning) to forward a copy of the application to the RTA. Further Clause 5 of SEPP 11 requires provides as follows:

- (5) *Where a copy of a development application has been forwarded to the Traffic Authority pursuant to subclause (3) or (4), the consent authority shall not determine the application until:*
- (a) it has received a representation with respect to the application from the Traffic Authority, or*
 - (b) the Traffic Authority has informed the consent authority that it does not wish to make any representation with respect to the application, or*
 - (c) 21 days have elapsed after the date on which the copy of the application was forwarded to the Traffic Authority,*
- whichever first occurs.*

In this instance, the RTA was notified of the SSS study and Part 3A Concept Plan application on 27 June 2006. The RTA's submission was not received until after the close of the extended exhibition period on 23 August 2006, which is noted on the Department of Planning's summary Excel spreadsheet of submitted submissions. In this instance, the RTA did not respond to the Department of Planning with 21 days. The Minister is therefore not prevented from determining the application. Notwithstanding, while we believe there is no requirement to defer the processing of the application

further to seek a formal response from the Regional Traffic Committee, all the issues raised by the RTA and Council regarding traffic matters have been addressed.

Notwithstanding the above should the DoP require plans can be prepared for submission to the RTA in accordance with its requirements.

We note that we have addressed the other matters raised in the RTA's submission in Issues 47-49 of this report.

DEVELOPER CONTRIBUTIONS

Issue 51 Advice regarding progress of Planning Agreement

ISSUE 51 Provide advice in regard to progress of Planning Agreement

Agency DoP Memo of 1.9.06, page 4

The memo implies that the Agreement should not include the Minister. Neither the Planning Agreement position paper nor the EAR states that the Minister would be a party to the Agreement.

While alternate mechanisms remain available, a position paper in regard to a proposed planning agreement is provided with the concept plan application, as a means of addressing four requirements, in particular:

- payment of Section 94 contributions and consequent acquisition of lands identified in the S94 Plan;
- dedication of riparian corridors and securing their long term management as public lands;
- dedication of other lands, which do not form part of riparian corridors or are proposed to be acquired by Council under its Section 94 plan, to contribute to the formation of the regional coastal park; and
- the provision of other public infrastructure, primarily being the north/south link road inclusive of the Wrexham Road extension connecting to the north.

The planning agreement is not required to be formalised and signed until prior to the grant of project plan approval. While it may form a simplified and aggregated means of documenting the process for resolving the above issues, the planning agreement is not essential and the relevant issues can be addressed by other mechanisms. For example, Section 94 contributions are required by Council's current contributions plan can be paid, road construction can be committed to as part of the concept plan and project plan approvals and a commitment can be incorporated into the relevant approvals for the dedication of the riparian corridors and other lands.

Notwithstanding, at present the preferred process is to continue with the preparation of the planning agreement. The present status of resolution of the above issues through the planning agreement process is outlined as follows:-

Section 94 Contributions

Stockland has committed to the payment of Section 94 contributions in accordance with Council's current plan. As reaffirmed within recent correspondence, Council is committed to acquiring Stockland land zoned 6(a) to the east of the concept plan application site for public open space purposes, in accordance with its current Section 94 contribution plan.

ARV have provided justification as to why section 94 contributions should not be paid in regard to their proposed development for older and disabled persons. Council has raised no objection to the terms of the draft planning agreement as proposed by ARV.

Riparian Corridors

In accordance with various correspondence received from Council, Council has agreed in principle to accept dedication of the riparian corridors as public reserve, subject to a 24 month maintenance period. These terms are agreed to by Stockland.

Dedication of Other Public Lands

As outlined within the planning agreement position paper, Stockland is committed to dedicating as public open space, various additional lands which will contribute to the formation of the regional coastal park.

Provision of Public Infrastructure

As outlined within the position paper regarding the planning agreement, Stockland, in partnership with ARV, remain committed to the provision of public infrastructure to be provided in association with the development. This public infrastructure includes the north/south link road which requires various bridges and the Wrexham Road connection. Council has resolved to proceed with the process of reclassifying the Wrexham Road extension corridor to facilitate the grant of owners consent. In recent correspondence, Council have indicated in principle agreement to providing owners consent subject to some monetary recompense. Council and Stockland will come to a commercial arrangement in regard to this matter, prior to the issue of project plan approval.

Accordingly, the relevant matters to be addressed within the planning agreement are dealt with by other mechanisms, but are nonetheless substantially progressed. The most significant issue, relates to the Wrexham Road extension, and in this regard the LEP process is currently underway and is expected to be completed prior to the end of 2006, well before the grant of project plan approval will be required.

Issue 52 More details required for Council

ISSUE 52 *Council require more details are provided regarding design, standard and condition of the infrastructure and land intended to be ceded to Council is known*

Agency **WCC** **Letter of 1.9.06**

The Planning Agreement will not be capable of being signed until the end of the Project Plan application stage when more details regarding the proposal will be available and confirmed.

The planning agreement will form part of the project plan application. This is currently being progressed and the final details can only be submitted when all parties agree. To date the current s94 (June 2006) Plan is not in dispute, the infrastructure to be provided is not in dispute and the last remaining negotiable item is Wrexham Road.

Issue 53 Clarify ownership and management of 7(a) land prior to zone finalization

ISSUE 53 *Ownership and Management of 7(a) land should be clarified prior to finalising zone boundaries*

Agency **DEC** **Letter dated 16.8.06, page 3**

Wollongong City Council in previous correspondence and during the Col process, has agreed, in principle, that public ownership of the land zoned 6(a) and 7(a) is the best way to ensure the protection and management of cultural and environmental values in such land. Further this correspondence also states that Council is willing to accept dedication after a reasonable maintenance period of the corridors zoned 6(a), which is proposed to be zoned 7(a) as detailed in the SSS study.

Whilst Council accepts in principle the ownership of environmental lands in the corridors, they also note that Council is willing to accept ownership after a reasonable maintenance period. The *Submission to the Minister for Planning on a Planning Agreement for Infrastructure* notes that Stockland will maintain the riparian corridors for a period of 24 months prior to dedication to Council of each individual stage.

Council in previous correspondence has indicated it's in principle to enter into the planning agreement, subject to the confirmation of agreement in regard to the maintenance period and the receipt of monetary recompense. As outlined above, Stockland have confirmed their agreement in regard to the maintenance periods for the riparian corridors, and a process has commenced to work towards an negotiate agreement in regard to the payment of monetary compensation to Council.

Issue 54 Upgrade of Thirroul Station

ISSUE 54 *Possible need to upgrade Thirroul station, including the augmentation of the commuter car park to cater for the resultant increased patronage. The developers are requested to contact RailCorp to negotiate possible developer contributions for augmentation works*

Agency **RailCorp** **Letter of 25.9.06 (Item 16)**

As detailed in the EA Report the design provides for the maximizing of residential dwelling density in walking distance of Thirroul railway station in order to discourage driving to station. This opportunity was recognised in the CoI findings and Charles Hill report. In addition, provision is made for bus route that could readily service Thirroul railway station.

The development would result in only a minor percentage increase in total overall patronage of the railway station. Therefore there is considered to be little nexus to warrant the need for augmentation of Thirroul railway station as a consequence of this development and a developer contribution would therefore be inappropriate.

ARV and Stockland are of the view in this instance that the condition of Thirroul rail station is a matter for the Railcorp and the State Government.

EMPLOYMENT

Issue 55 Details on operational jobs gained from ARV / lost from Cooksons

ISSUE 55 *Provide balance sheet comparing full-time equivalent operational jobs gained from ARV and lost from Cooksons*

Agency **DoP** **Memo of 1.9.06, page 4**

Cookson Plibrico currently employs 75 people of which approximately 50% are office administrative positions and 50% are in production.

ARV will employ a total of 62 people on the site in the following positions:

- 32 in residential aged care facility;
- 2 in the community centre;
- 3 cleaners;
- 2 chaplains;
- 4 gardeners;
- 3 maintenance staff;

- 5 in the café/kiosk;
- 2 hairdressers;
- 1 doctor;
- 1 podiatrist;
- 1 beautician;
- 1 nurse;
- 1 physiotherapist;
- 2 in home support services;
- 1 gym instructor;
- 1 in pool maintenance;
- 62 in total.

These employment numbers on the ARV site will grow as the needs of the village grow.

SCHOOLS

Issue 56 Additional classrooms for local primary school to accommodate demand

ISSUE 56 Local primary school, Bulli Public School, may require additional classrooms to accommodate the extra demand (estimated at 60 government primary school students). Neighbouring government schools are fully utilising their permanent teaching capacity

Agency Dept of Education & Training Letter dated 7.8.06

The subject site has been zoned for residential development since 1997, and the capacity of local schools to accommodate additional student demand is a matter relevant to the Local Environmental Study and LEP preparation process that preceded zoning of the land.

The Department of Education and Training in their submission indicate that Bulli High School has capacity to cater for the increased demand, however the Bulli Public School may require additional classrooms to accommodate the extra demand. Possible options to overcome the demand of the local primary school have been discussed with DET. The possible options include bussing children to other nearby schools however, they do not have teacher capacity and is therefore not an option, possible boundary changes to the catchment areas, although DET indicated that this is unlikely to resolve the demand problems, construction of new facilities although this option is not reflected in the current works program.

The only viable option would be to provide demountable buildings at Bulli Public School to cater for the additional demand.

The factors that would affect the demand for primary school student places include staging of the development and the household types likely to occupy the future housing. The development will be staged, such that the demand will be spread over the life of the development. Children arriving in the first stages are likely to move through the primary school when the final stages of the development are occupied. Not all housing will be occupied by families with primary school age children, with older households being without primary school age children or retirees with no children living at home representing a proportion of the future housing. Based on these factors, DET considered that demountables would cater for the additional demand likely to be generated by the development.

DESIGN/ LAYOUT

Issue 57 Gated feel and pedestrian permeability of existing layout

ISSUE 57 Layout has gated feeling and could discourage pedestrian permeability

Agency WCC Letter of 1.9.06, page 2

The site has natural and physical boundaries including the railway line, Tramway Creek and the proposed Environmental Protection land to the east that separate it from surrounding development. Any development will therefore have a degree of isolation with surrounding development. The concept plan incorporates a high degree of permeability for pedestrians, cyclists, motorists and public transport along all boundaries to integrate the residential area with existing adjoining development.

The location of the town house and apartment super lots responds to the proximity to Thirroul Station and is not designed to form a "wall effect" to the subdivision. Up to 25 townhouses are proposed in total (approximately 20 dwellings for the super lot beside the railway line and 5 for the super lot north). This equates to a density of 1 dwelling per 500 - 600m², respectively. This very low density and its 2 storey scale development would not contribute to creating a walled effect.

The apartment super lot has a very small frontage to the north-south link road forming the vehicular entry to the site. A future building will therefore have only a narrow presentation to the site's entry reducing any possible walled effect, and its scale will be ameliorated by the 17m road reserve.

In addition, the 17m road reserve for the link road has proportions that would not operate to discourage public access. The visual analysis carried out by Arterra, forming part of the Concept Plan application (Appendix B of Volume 2 - Stockland EA report) illustrates how the apartments will sit generally below the canopy line of the vegetation along the southern edge of Thomas Gibson Reserve, thereby not contributing to the sense of a wall effect.

It should be noted that the visual analysis does not detail the proposed apartments, but shows only maximum bulk. It is clear that a project application will detail building articulation materials and finishes, and landscaping.

The ARV retirement village is located within the centre of the site with less than half of its frontage to the north-south link road have a street address, with the remainder being occupied by the retained Turpentine Forest. The visual impact and streetscape presentation of ARV's residential development is therefore not considered to contribute to any gated and wall effect.

The Concept Plan for ARV site includes 27% of the site as land zoned for environmental protection that is accessible to the public and provides clear links between the proposed regional park and beach to the east and surrounding residential areas to the north, west and south. The concept provides an appropriate balance between public pedestrian access through the site and a village environment that will be developed further in subsequent design application stages.

Issue 58 Interface with Thomas Gibson Park

ISSUE 58 Interface with Thomas Gibson Park not addressed

Agency WCC Letter of 1.9.06, page 2

Details of the apartment super lot will be provided with a Project Plan application. The site has a northern orientation overlooking this park. These two site opportunities will ensure that future apartment buildings would be designed with a strong address to the Thomas Gibson Park.

As stated above, the visual analysis carried out by Arterra illustrates that the proposed building envelope for the future apartments will sit generally below the canopy line of the vegetation along the southern edge of Thomas Gibson Reserve. Potential visual impacts are therefore minimised by the proposed built form responding to the existing environment.

Issue 59 Suitability of existing pedestrian links to Thirroul Station

ISSUE 59 Further details on the suitability of the existing pedestrian links to Thirroul railway station, and required improvements to encourage safe pedestrian access to be addressed

**Agency WCC Letter of 1.9.06, page 2
RailCorp Letter of 25.9.06 (item 15)**

The Concept Plan indicates that the north-south road link will incorporate footpaths to connect with Thomas Gibson Reserve. The pedestrian link would make use of the Thomas Gibson Reserve to provide the pedestrian connection to Thirroul railway station. Preliminary concepts for a pedestrian path way and additional landscaping will be shown as part of Wrexham Road connection with further details more appropriately being provided at the project plan stage.

See additional comments in Issue 77 in regard to the ARV's component.

ARV and Stockland agree with the Railcorp recommendation and for this to be included in the statement of commitments.

Issue 60 Fencing and security of rail line

ISSUE 60 Fencing and security of Rail line to be considered

Agency RailCorp letter of 25.9.06 (Items 11 and 12)

RailCorp suggest that a condition be imposed requiring a replacement of the current fencing with a 2m high fence, with details being submitted to RailCorp for review before the fencing work is undertaken. Details of the future fencing can be further considered at the project plan stage. And this will be included in the Statements of Commitments.

Future land uses adjoining the railway line vary including roads, rear boundaries to housing allotments, townhouse super lots and open space areas. The design of fencing will need to consider the relationship to the immediately adjoining land uses to ensure that the fencing design considers the context from security, visual and urban design perspectives.

Issue 61 Need for more active open space

ISSUE 61 More area of active open is space required to support an increase in residential population

Agency WCC Letter of 1.9.06

The subject site has been zoned for residential development since 1997, and the likely future demands for active open space would have been considered as part of the Local Environmental Study and LEP preparation process that preceded zoning of the land. This would have allowed the opportunity for the provision of additional active open space area to be incorporated into the LEP. The proposal provides for greater open space than that zoned under the current LEP.

The recently adopted *Wollongong City Council Section 94A Development Contributions Plan, June 2006* identifies only 2 items in its works schedule that would relate to active open space requirements for the Sandon Point locality including: -

1. Thomas Gibson Park Masterplan implementation with an estimated time frame of 2006/7 – 2010/11; and
2. Sandon Point land acquisition with an estimated time frame of 2006/7 – 2007/8.

The proposed areas of open space to be acquired are scheduled in 2006/7 to 2007/8.

The proposed development will substantially contribute to the provision of 30.4ha of regional open space in addition to the existing open space areas and the beach. The combination of these open space areas immediately adjacent to the subject site would

more than meet the expectations of the Wollongong LEP and DCP, and the needs of the incoming population of the development.

The Concept Plan for ARV site provides 2.2 hectares or 27% of the site as land zoned for environmental protection that is available as open space for public use. Further, within the residential zone, the proposed buildings cover only 30% of the site leaving 70% of the site for open space and roads. Overall, 78% of the site is for open space and roadways. The provision of open space on the ARV site far exceeds any standard requirement on the amount of open space for residents.

Issue 62 Design controls to ensure good urban outcome

ISSUE 62 No design controls to ensure good urban outcome

Agency WCC Letter of 1.9.06, page 5

It is noted that the Wollongong City Council submission in its opening comments recognises that under Section 75M of the EPA Act a detailed description of the project is not required for a concept plan. Nevertheless, the Council's submission suggests that further details should be provided including development controls to ensure a good urban design outcome.

This has been discussed in Issue 1 above. The proposal is at this stage a Concept Plan Application for subdivision only. Stockland are committed to providing Urban Design Guidelines at the Project Plan stage which in conjunction with the built form controls nominated in the SSS study will operate to produce a good urban design outcome not dissimilar to the urban form and character of Stages 2-6 (The Point).

NOISE

Issue 63 Impact on ARV occupants

ISSUE 63 Concerned regarding acoustic impacts on ARV occupants

Agency RailCorp letter of 25.9.06 (Item 2)

Refer to JBA's response for the ARV component.

Noise and vibration will be addressed further in the detailed design of buildings in future applications to meet relevant standards.

Stockland and ARV will commit to designing future residential buildings in accordance with *RailCorp's Interim Guidelines for Applicants – consideration of rail noise and vibration in the planning process*. This will be incorporated into the Statements of Commitments.

GENERAL

Issue 64 Zoning of 6(a) and 7(a) land to be in a single 7(a) zone

ISSUE 64 *All 6(a) and 7(a) land should be a single 7(a) zone with the primary objective of conserving aboriginal cultural heritage and biodiversity*

Agency **DEC** *Letter dated 16.8.06, page 3*

The SSS study has remained as consistent as possible with the Charles Hill report and the recommendation for the location and extent of the 6(a) and 7(a) zones. The DEC letter dated 16 August 2006 includes a suggestion to incorporate all of the land they consider being of high Aboriginal cultural value (Figure 4) and biodiversity value within the 7(a) zone. This would affect much of the currently 6(a) zoned land extending south-east towards Bulli Point. The extent of this proposed 7(a) zone is far greater than both the COI and Charles Hill recommended zonings (refer to Figure 12 in Stockland EAR, p45 for a comparison of the recommended zonings). Accordingly, we do not support this recommendation.

The SSS study proposes one 7(a) zone for land nominated for environmental protection. Proposed zoning is as currently in the Wollongong LEP which will eventually be replaced with the corresponding zoning provisions in the standard LEP instrument.

DEC appears to be acknowledging that the alleged Women's site is not proven. AP boundaries as defined by Waters Consultancy, does not include any Cookson Plibrico Land.

Issue 65 7(a) zone exclusive of roads/infrastructure

ISSUE 65 *The 7(a) zone should be exclusive of roads and other infrastructure*

Agency **DEC** *Letter dated 16.8.06, pages 9 & 12*

Roads proposed as part of the Stockland component are not located within the proposed 7(a) zone. The only infrastructure located within the proposed 7(a) zone are the water quality basins, however these are located outside of the 30m wide core riparian protection zone. This is illustrated in the stormwater concept plans prepared by Brown Consulting (refer Appendix A of SSS study and Appendix E of the Stockland EAR). This has also been reviewed by Cardno Forbes Rigby (see **Appendix C**), who reach the same conclusion.

Development infrastructure within the ARV component is generally not located within the riparian zones and the APZ and stormwater structures are appropriately placed to manage the vegetation, as explained above. The concept plan is designed to minimise infrastructure in the 7(a) zone. A requirement for all infrastructure to be outside 7(a) zone is not practical or reasonable in the circumstances.

Issue 66 Consultations with RailCorp and bridge designs

ISSUE 66 *Outcome of consultations with RailCorp regarding the bridge designs for Wrexham Road and the upgrade of Sturdee Avenue bridge required, including on going maintenance. Advise regarding consultation with RailCorp re rail bridge design.*

Agency **WCC** *Letter of 1.9.06, page 3*

Advice in regard to utility services, and subdivision construction details and consultations with RailCorp has been provided by Cardno Forbes Rigby in their letter dated 22 September 2006 (refer to **Appendix I**).

RailCorp has been consulted regarding the Sturdee Avenue Bridge. Given that the bridge is to be eventually converted to pedestrian / cyclist use, upgrades are not considered necessary at this stage. RailCorp will be further consulted if required during the construction phase. See submission from Railcorp below.

Issue 67 Search RailCorp services and structures

ISSUE 67 *Need to undertake search for RailCorp services and structures*

Agency **RailCorp** *letter of 25.9.06 (Item 1)*

Cardno Forbes Rigby have detailed their application process with RailCorp to establish whether there are any services within the subject site in their letter dated 22 September 2006 and attached at **Appendix I**. These searches should not delay the Concept Plan and the searches and liaison can be undertaken as part of the preparation of the Project Plan application. This can be incorporated into the Statement of Commitments.

Accordingly ARV and Stockland agree with the Railcorp recommendation for such searches and this is to be included in the statements of commitments.

Issue 68 Risk of stray currents/electrolysis

ISSUE 68 *Stray currents/ electrolysis risk to be considered in building design*

Agency **RailCorp** *letter of 25.9.06 (Item 3)*

Stockland and ARV are agreeable to the condition suggested by RailCorp and will undertake to provide the Electrolysis Risk Assessment report prior to the issuing of any subdivision certificates.

Issue 69 Access for RailCorp maintenance

ISSUE 69 Access for RailCorp maintenance should be retained, including placement of buildings and structures.

Agency RailCorp letter of 25.9.06 (Items 4, 8, 14, 17 and 18)

The north-south link road will provide public access along rail corridor that should improve the access currently available. Any specific access points that RailCorp have in mind could be incorporated into design at project plan stage.

The placement of building and structures and their architectural design (location of balconies, windows, external plumbing) are detailed matters that will be addressed at Project Plan stage.

ARV and Stockland agree with Railcorp recommendation in regard to this matter and this will be included in the statements of commitments.

Issue 70 Distraction to drivers from lighting design/reflective materials

ISSUE 70 Lighting design / reflective materials should minimize distraction to drivers

Agency RailCorp letter of 25.9.06 (Item 5)

The western edge of the site beside the railway line will comprise a combination of acoustic walls and landscaping. The railway line is also within a cutting for part of the western boundary of the site. The acoustic walls would not be constructed with reflective materials, and the walls and future landscaping would ensure that visual distractions to train drivers would be minimised.

Details of the acoustic walls, landscaping and building materials to be used in the design of the future residential buildings will be submitted with the at the project plan stage.

Stockland and ARV will commit to liaising with RailCorp regarding the possible use of lighting, signs or reflective materials (permanent or temporary) within the proximity of RailCorp's facilities. As noted in the response to Issue 66, the application with RailCorp is to allow a Deed to be drawn up that will also cover the acoustical wall. This detail can be addressed at project plan stage and during consultation with Railcorp, and details regarding the acoustic wall might be included as one of the conditions in the Deed.

Issue 71 Structural adequacy of rail bridges

ISSUE 71 Concern regarding the structural adequacy of rail bridges to accommodate high volume/ heavy traffic associated with construction

Agency RailCorp Letter of 25.9.06 (Items 9 and 10)

The Point Street bridge has already been upgraded to accommodate future traffic flows.

The existing Sturdee Avenue rail bridge is already used for heavy vehicle access to the Cooksons Plibrico site. Notwithstanding, RailCorp has been consulted regarding the Sturdee Avenue bridge. Given that the Sturdee Avenue bridge is to be eventually converted to pedestrian / cyclist use, upgrades are not considered necessary at this stage. RailCorp will be further consulted if required during the construction phase. Agree with Railcorp recommendation for this to be included as condition of approval, or otherwise in statement of commitments.

The Wrexham Road bridge will be reconstructed. However in the interim there will be a need to use the existing Wrexham Bridge and the Sturdee Street Bridge for construction traffic in the first stage. Details of the process to ensure structural adequacy of the existing rail bridge is set out in Cardno Forbes Rigby's letter dated 22 September 2006 at **Appendix I**.

Issue 72 Proposal subject to quadruplication

ISSUE 72 Proposal is subject to quadruplication of rail line

Agency RailCorp Letter of 25.9.06 (Item 13)

The quadruplication proposal will be included with the consultations with RailCorp and addressed as part of the project plan application. Stockland have not been made aware of any proposals for quadruplication of the rail line or the need to acquire land, particularly in relation to the bridge designs.

Stockland and ARV agree with the Railcorp recommendation for further consultation and this to be included in the statements of commitments.

Noise and vibration will be addressed further in the detailed design of buildings in future applications to meet relevant standards as discussed above.

Issue 73 Affordable housing

ISSUE 73 Issue of affordable housing not addressed

Devices which prevent the Department or any other agency from providing housing assistance in the future in Sandon Point should not be allowed.

Agency Dept of Housing Letter dated 29.8.06, page 1

It should also be noted that the proposed development of the vacant site would not displace existing residents from lower cost housing. Therefore the need to offset such dislocation does not arise.

The ARV seniors living and residential aged care facility, together with the higher density sections of Stockland site providing up to 105 townhouses and apartments, will provide increased housing choice. Increasing housing supply will improve affordability generally. ARV is proposing housing that will be affordable for seniors.

Council has no affordable housing scheme.

We note the Department of Housing's comment regarding devices to prevent the Department or any other agency from providing housing assistance in the future, but do not consider any action is required in response.

Issue 74 Size and mix of future housing

ISSUE 74 No information regarding size and mix of future housing

Agency Dept of Housing Letter dated 29.8.06, page 2

Aside from the residential aged care facility and seniors housing proposed in the ARV component of the Concept Plan, the subdivision proposed in the Stockland Concept Plan provides for a variety of housing in the form of residential allotments for single housing and super lots for townhouses and apartment.

The Department of Housing submission notes that the *Wollongong City Council's Housing Study and Community Plan identified a need for appropriate and affordable housing as continuing to be major issues of the LGA particular for young people, older people, people with a mental illness and single men.*"

The proposed subdivision would not necessarily be appropriate for these groups. Social considerations such as access and proximity to community and support services would need to be considered to ascertain the needs these particular groups. This is a matter of detail beyond the scope of the concept approval which has not resolved the exact size and mix of future housing which will be part of the design development process for the future project plan applications. Indeed, this is an issue more relevant to the initial rezoning of the land.

Notwithstanding, the ARV dwellings will meet standards in SEPP (Seniors Living) and contribute to providing a mix of housing opportunities on the site..

Issue 75 Integration with existing community, employment and facilities

ISSUE 75 New development needs to integrate with existing community including access to employment and community facilities

Agency Dept of Housing Letter dated 29.8.06, page 2

Practical means (set out below) to integrate the future residential subdivision with the existing community will be considered at the project plan stage:

- Physical infrastructure and connectivity;
- Welcome program for new residents; and
- Supplementation of population therefore greater viability of existing services.

The concept plan does not prevent integration with the existing community, nor access to employment or community facilities. The site's proximity to Thirroul Railway station will provide an important means to connect the future population with employment opportunities both within the Wollongong and Sydney metropolitan regions.

Refer also to Section 7.9 (page 53) of the EA report for discussion on integrating ARV development with the existing community.

Issue 76 Owners consent not obtained for all land

ISSUE 76 Owners consent not obtained for all land included in the Concept Plan

Agency WCC Letter dated 1.9.06, page 1

All lands the subject of the concept plan are owned by either Stockland or Cooksons, who have provided owners' consent. In regard to external works, such as Wrexham Road, the EAR notes that these components will be part of the Project Plan. The necessary owner's consent will be obtained at that stage.

Issue 77 No reference to consultations with bus operators

ISSUE 77 No reference to consultations with bus operators regarding design and requirements.

Agency WCC Letter dated 1.9.06, page 2

Christopher Stapleton Consulting's (CSC) Traffic Review attached at Appendix G to the EAR (page 20) notes that the bus route will be provided in accordance with DCP 94/17. As stated in the CSC report "Provision of a bus service will be a decision of

a local bus operators and the Department of Transport, but the potential exists to extend local routes through the site between Point Street and Thirroul". The design of the north-south link road satisfies this requirement. Other internal roads will be designed in accordance with RTA, AUSTROADS, and AMCORD standards. Further consultation is not required at this stage. The proposed north-south collector will include footpaths designed in accordance with Council standards.

WCC were consulted on bus access requirements. Based on WCC advice the north-south link road is to be designed to accommodate bus movements. The proposed carriageway width and gradient is satisfactory to accommodate a regional bus service.

Residents of the retirement village will also have a bus service.

Outside the site, pedestrian access to the rail station is provided along footpaths on Council road reserves. ARV is of the view that it is not responsible for the condition of Council road reserves. However, if Council and DoP maintain that ARV should upgrade Council footpaths outside the site, then this can be negotiated as part of the Planning Agreement.

Issue 78 Impacts on Point Street

ISSUE 78 Impacts on Point Street

Agency WCC Letter dated 1.9.06, page 3

Peak hour traffic flows on Point Street are estimated to be up to 200 vehicles (see CSC report at Appendix G of the Stockland component of the EAR). This is within standard expectations for a local street. Given the low traffic flows, traffic calming and management measures are not required.

CSC's Traffic Review (attached at Appendix G to the Stockland component of the EAR) concludes that traffic flows along Point Street (east) and the coastal route will not increase other than as a result of local residents using the Link Road for local north-south trips.

Issue 79 Intentions for pedestrian access for Sturdee Bridge

ISSUE 79 Intentions for pedestrian access for Sturdee Bridge.

Agency WCC Letter dated 1.9.06, page 3

CSC's Traffic Review attached at Appendix G to the Stockland component of the EAR notes at page 7 that the COI recommended that secondary vehicle access be provided from Sturdee Avenue. CST disagreed with this recommendation.

As noted in JBA's response in relation to the ARV component of the Concept Plan, the intention is for Sturdee Bridge to be for pedestrian and cycle access. Detailed design will be developed in the future stage, and may include signage, bollards, line marking and speed hump/s.

Issue 80 Consultation with service providers

ISSUE 80 Consultation with service providers

Agency WCC Letter dated 1.9.06, page 3

Section 7.10.3 of the Stockland EAR (page 101) addresses the consultation with service providers.

The ARV EA report also includes a statement on utility services. Service providers will be consulted in the next stage of planning.

Issue 81 No environmental impacts to rail corridor

ISSUE 81 No environmental impacts to rail corridor

Agency RailCorp Letter dated 25.8.06, page 6

There are no adverse impacts arising in the Concept Plan. Further consideration to potential impacts will be considered at the Project Plan stage. ARV and Stockland agree with the Railcorp recommendation and this to be included in statement s of commitments.

Issue 82 OSD for ARV

ISSUE 82 No OSD needs to be provided for the area of the Anglican Retirement Village as discussed in Council's new On Site Stormwater Detention Code 2006

Agency WCC Letter dated 1.9.06

OSD will be removed. This will be included in statement of commitments.

Issue 83 Removal of Turpentine forest for APZ

ISSUE 83 *Removing a portion of the Turpentine Forest to accommodate an APZs is not supported- (not included in final submission)*

Replaced with- Report should consider views of Rural Fire Service to ensure the safety of future occupants of the retirement village.

Agency **WCC** *Letter dated 1.9.06*

See response below in regard to the submission from RFS. BES notes the RFS do not express a view in regards to the Turpentine Forest APZ. The proposed 20 m APZ for the Forest is in compliance with 'Planning for Bushfire Protection', that is being a remnant forest requiring a minimum 20 m setback. Cumberland Ecology discusses and justifies the inclusion of a portion of the APZ within the disturbed margins of the Forest.

CROSS REFERENCE CHECK OF RESPONSES BY AGENCY

Please refer to table attached at **Appendix J** incorporating categorisation of the issues raised by each agency which includes a cross reference to the issues contained in this response.